

MEDICAL WORLD NEWS

JANUARY 20, 1961



MAN NEARS SPACE

HEPATITIS:
Guides to Therapy
In a Peak Year

James T. McClellan, M.D.
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Lexington, Ky.

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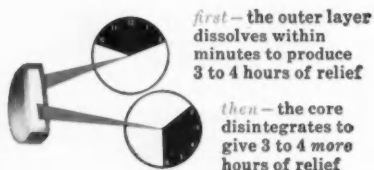
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and paranasal
membranes, huh?"

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MEDICAL WORLD NEWS

THE NEWSMAGAZINE OF MEDICINE

JANUARY 20, 1961

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LATE NEWS

INFANTS AND PEDIATRICIANS ENDORSE NEW FROZEN BABY FOOD

Four-month-old infants can—and should—have frozen “TV dinners.”

A new line of frozen baby foods, including vegetables, soups, meats and fruit, has been tested by potential “consumers” at the University of Missouri School of Medicine, and given the nod from pediatricians Gerard Van Leeuwen, Emily J. Guyer and Robert L. Jackson. The 49 infants, who began cereal and custard feeding at three months, got the frozen foods at four months and “accepted them readily.” Their growth patterns and general health were good, and none developed diarrhea, constipation and anemia or allergic manifestations.

Bacteriologic studies at the University of Chicago showed no food poisoning organisms and all foods tested appeared to be “of excellent quality.” It also was found that the food could be safely stored up to a year in a deep freezer.

What might be most important, in practical terms, was the opinion of the test infants’ mothers. Without exception, they said the new baby foods appeared fresher and more appetizing, and were preferable to other types because of ease of preparation and storage. As an added bonus, the mothers noted, the small packages allowed them to store and use a greater variety of foods for their babies, the Missouri pediatricians report in the *AMA Archives of Diseases of Children*.

NEW HYPOTHERMIA TECHNIQUE COOLS HEART AS LOW AS 4° C

A new hypothermia technique, called “ice chip cardiac arrest” allows drastic reduction of heart temperature for surgery, without the insult of profound whole-body hypothermia.

Using the method, Canadian surgeons reduced the heart temperature of a 15-year-old boy to 4°C, which they believe is the first time this level has been reached. The heart muscle survived undamaged after being bloodless for 40 minutes during which bicuspidization of the aortic valve was performed, according to Dr. R. O. Heimbecker and associates at Toronto General Hospital.

Sterile ice chips made from physiological saline are applied locally to bring about the reduction, they ex-

plain. It takes three minutes to drop body temperature to 31°C by means of a heat exchanger, and four more minutes to drop heart temperature to 4°C.

NEPHROSIS TRANSFER IN RATS TRACED TO ANTIBODY REACTION

For the first time, nephrosis has been successfully transferred from rat to rat. Because the experiment was successful only in rats made tolerant to donor cells, it bolsters a long-standing theory that the disease may result from an immunological process.

Drs. Evelyn V. Hess, Charles T. Ashworth and Morris Ziff of the University of Texas Southwestern Medical School, Dallas, injected 20 million spleen cells from prospective female donors into the peritoneum of one-day-old rats. The donors were then made nephrotic by injection of a sterile mixture of kidney homogenate containing heat-killed bacteria.

Eight to 12 weeks later, the donors were sacrificed and their lymph nodes harvested. Cell suspensions were then injected into the recipients who had been made immunologically tolerant.

Of 17 rats injected, 13 developed nephrosis. Diagnosis was based on ex-

cessive proteinuria and high serum cholesterol, and confirmed on autopsy. In 29 control animals, only one developed evidence of disease.

The fact that the injected cells must be acceptable to the host before transfer is accomplished indicates that nephrosis is probably not the direct result of an infectious agent but secondary to an immune reaction, says Dr. Hess.

NEW ORLEANS ASTHMA ATTACKS ARE TRACED TO ILL-WINDS

Mysterious epidemics of asthma which occasionally plague New Orleans can now be forecast by the weatherman—thus allowing hospitals to prepare for sudden rises in case loads.

The pollutants have not yet been identified, according to Dr. Richard A. Prindle, chief of the Air Pollution Medical Program, Public Health Service. But when the wind begins to travel from the southern part of the city at about two to four miles an hour, an outbreak can be expected, and the weather bureau alerts hospitals. Sometimes as many as 220 sufferers have been admitted to a New Orleans hospital in an hour during such a wind-borne epidemic.

BALL IN A CAGE IS EFFICIENT MITRAL VALVE

An artificial ball-type mitral valve, the first of its kind, has been successfully inserted in the hearts of two patients at the University of Oregon Medical School.

The valve consists of a ball of silicone rubber about 3/4 of an inch in diameter enclosed in a plastic or stainless steel cage 1 1/2 inches high. The outer margins of the cage are covered with cloth; stitches passed through the edges of the patient’s valve orifice and then through the cloth anchor the valve in place. The heart beat moves the ball from an open to a closed position.

Developed by Dr. Albert Starr, assistant professor of surgery at the University of Oregon and M. Lowell Edwards of the Edwards Development Laboratories, Portland, the artificial valve has proved life-saving in two patients whose mitral valves were irreparably damaged by rheumatic fever.

The physician-engineer team perfected it after experimenting for two



and a half years with at least ten valves of different sizes, shapes and materials. Testing is still going on to determine its wearing ability, but early results indicate that it will function indefinitely.

INDUSTRIAL CHEMICAL COUNTERS

COMA DUE TO SALICYLISM

An industrial chemical, THAM, rapidly reverses aspirin poisoning, says Dr. Gabriel G. Nahas, director of anesthesiology research, Columbia University College of Physicians and Surgeons.

In preliminary trials, four children who "ate aspirin like candy" received slow intravenous infusions of tris (hydroxymethyl) amino methane (THAM). They revealed blood salicylate levels of 72 to 85 mg per cent and blood pH values in the acid range; two of them were comatose.

Two hours after the infusion, the comatose youngsters were wide awake and the other two had recovered.

Dr. Nahas explains THAM's use against aspirin poisoning in terms of at least two of its properties. As an alkaline buffer of low toxicity, it quickly replaces the deficit of bicarbonate in the blood and normalizes the pH. It also reduces the corresponding acidity of the urine.

The drug is not yet available for general use, Dr. Nahas notes.

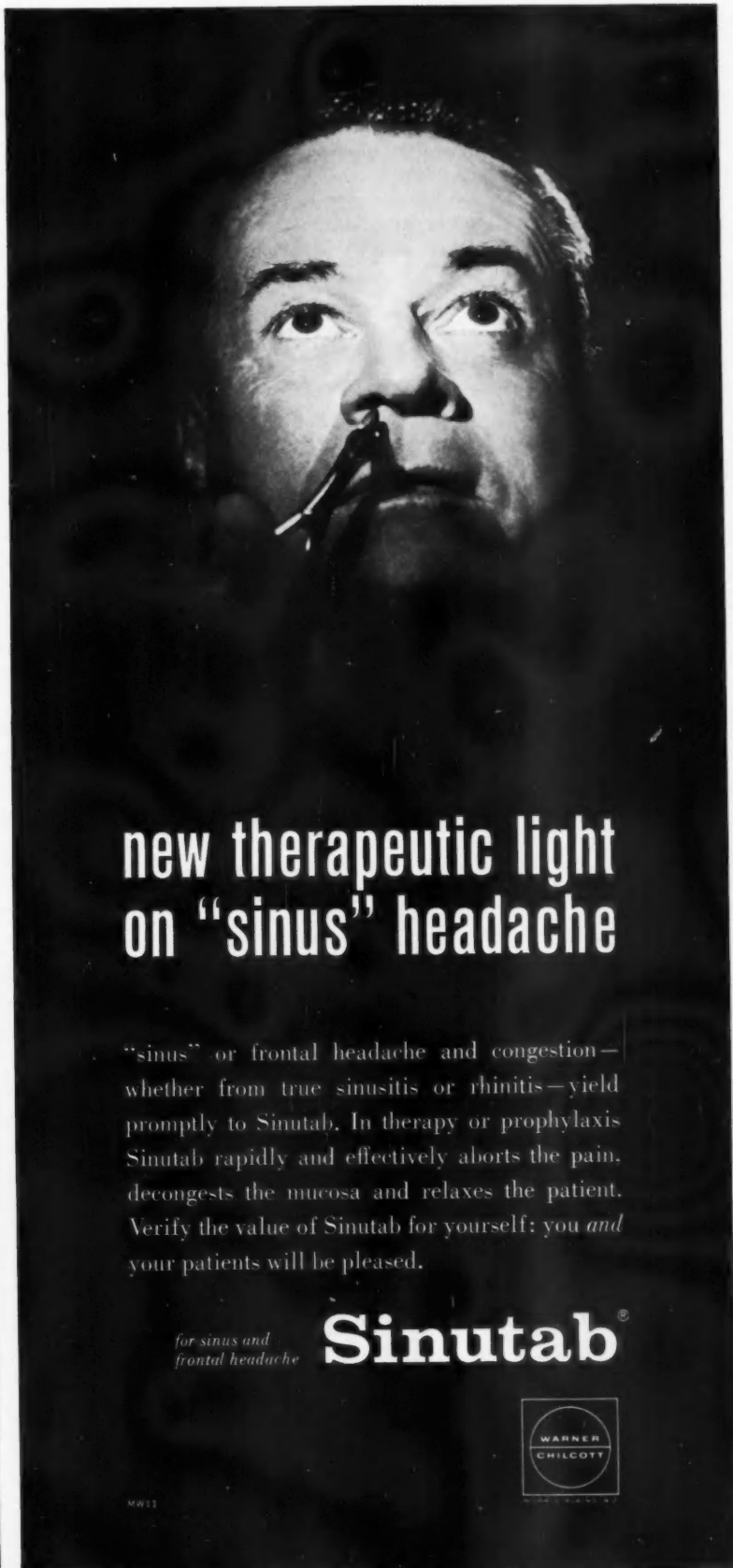
NO ILL EFFECTS EVIDENT FROM ORAL CONTRACEPTIVES

Oral contraceptives, which have been proving effective in mass tests, apparently produce no undesirable long-term effects, according to a study of Los Angeles women.

A total of 1,653 patients at the city's Planned Parenthood Center took the synthetic progestational hormones for as many as 42 months. After they were studied thoroughly, including vaginal smears and tissue biopsies from the lining of the uterus.

There had been some concern that the rather potent contraceptives might contribute to disorders of the genital tract and uterus, but investigators at the University of California at Los Angeles Medical School found no evidence of malignancy. In fact, eight of the group had shown evidence of malignancy prior to the study but not afterwards. Biopsies showed the uterine tissue to be generally "quiet and inactive," according to Dr. Dean Moyer and his associates.

Their report won the Pacific Coast Fertility Society award for the best paper at its recent annual meeting in Las Vegas, Nev.




new therapeutic light
on "sinus" headache

"sinus" or frontal headache and congestion—whether from true sinusitis or rhinitis—yield promptly to Sinutab. In therapy or prophylaxis Sinutab rapidly and effectively aborts the pain, decongests the mucosa and relaxes the patient. Verify the value of Sinutab for yourself: you *and* your patients will be pleased.

for sinus and
frontal headache

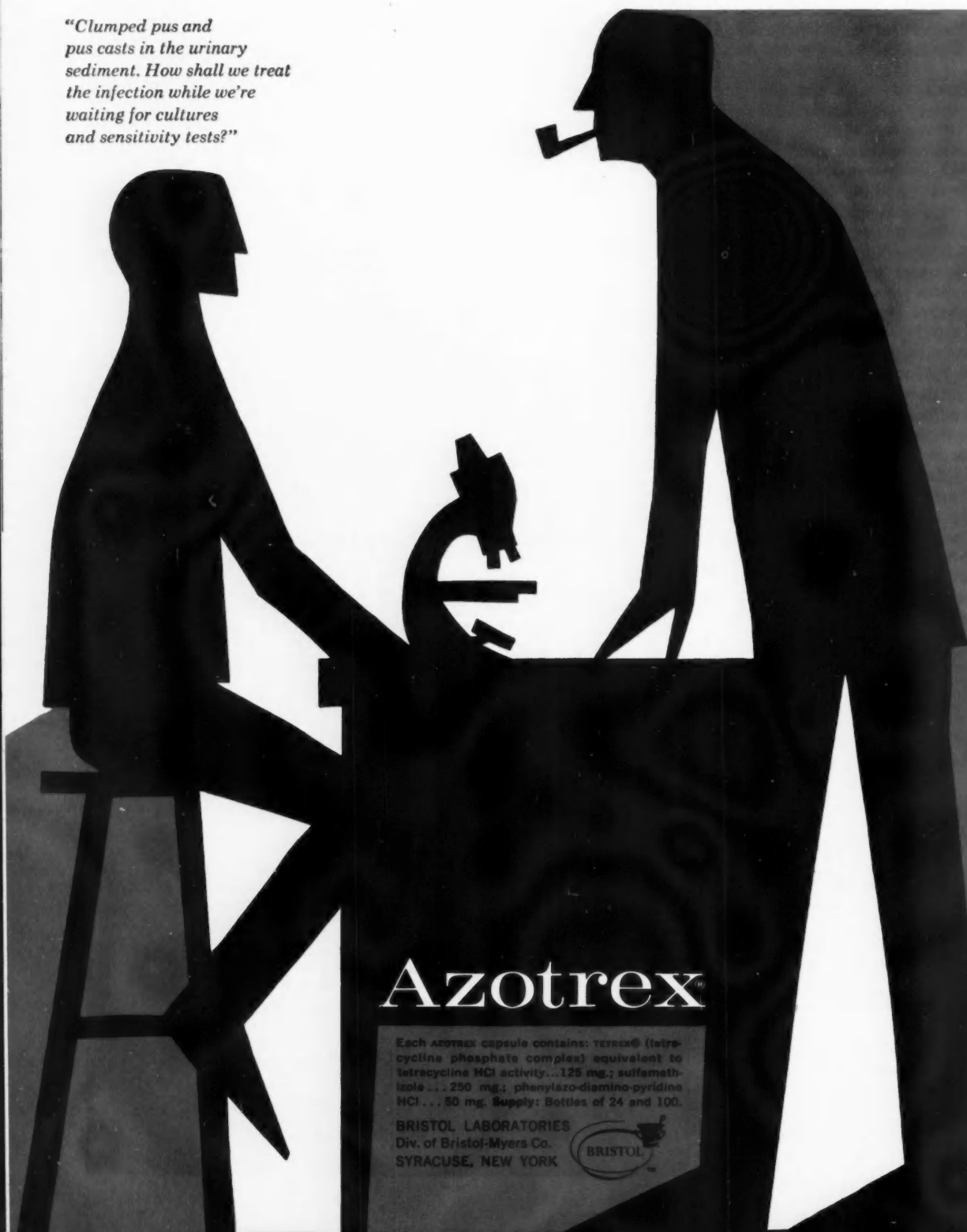
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and sensitivity tests?"*

*"Let's start with AZOTREX. The azo dye
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we'll change therapy when the lab report
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A LETTER FROM THE PUBLISHER

In getting this week's cover story, MWN found itself acting as a catalyst in a unique outer-space experiment.

Some weeks ago, as we were putting together Alex Dorozynski's feature article on space medicine, our Detroit correspondent, Jean Pearson, called us about a unique series of tests going on at Wayne State University.

Lawrence M. Patrick, associate professor of engineering mechanics, and his space-minded colleagues at Wayne had rebuilt an eight-story elevator shaft in the University's Medical Science Building and were rocketing embalmed cadavers, strapped onto a special sled, up the shaft from zero to 120 mph. The experiments were designed to determine the effects of explosive acceleration on the human vertebrae.

The prospects of accelerating cadavers in an abbreviated version of the blast-off which may shoot man into outer space seemed so interesting that we asked correspondent Pearson for pictures. She came back with an intriguing series of shots, in full color, of *corpus momentum*.

At the very close of her accompanying story, Jean noted that "soon Prof. Patrick hopes to be the first live subject in a new series of studies in the shaft."

This brought the obvious question from our associate editor Dorozynski: "When?"

"Whenever you like," was Prof. Patrick's answer. "I was going to do it one of these days, anyway. Might as well be now."

So on the morning of Friday, December 30, technicians strapped and taped the 40-year-old engineer in the metal airplane ejection seat at the foot of the 120-foot shaft. An instant later, he shot upward with rocket force to become the first man to experience this kind of controlled vertical acceleration.


The story of how Prof. Patrick felt in those few, tense seconds—along with an account of Alex Dorozynski's personal venture into weightlessness—begins on p. 26.



PROF. PATRICK gets set for shoot.

Maxwell M. Geffen

Publisher



Hypertensive nurse responds to **SERPASIL®**

(reserpine CIBA)

Antihypertensive and calming effects produce good results

Mrs. E. Y., age 45, is active and vigorous. She is a happy woman with many interests: antiques, baking, knitting. Trained as a nurse, she has been married 18 years and, until 7 years ago when her husband was promoted, worked in a doctor's office.

On April 8, 1959 she had a complete physical examination. There was a history of "migraine" headaches—probably due to tension—slight weight gain, and

minor gynecologic problems. Laboratory findings and EKG were normal. She had mild, essential hypertension.

Her physician prescribed Serpasil—0.25 mg. at bedtime. Blood pressure responded as shown in table at right.


Her physician reported: "In view of the slight blood pressure rise [after discontinuation of Serpasil] it is probable that intermittent Serpasil therapy will

be necessary indefinitely."

Calmer and normotensive, Mrs. Y. notes: "With Serpasil I don't care that the furniture doesn't get dusted every day."

BLOOD PRESSURE RECORD OF MRS. E. Y.

April 8	150/110 mm. Hg
May 10	140/90
June 12	110/80
July 20	110/70
November 11	116/70
(Serpasil discontinued)	
December 12	140/80



BLOOD PRESSURE THAT GOES UP WITH STRESS OFTEN COMES DOWN WITH SERPASIL[®]

(reserpine CIBA)

One reason that many cases of hypertension respond to Serpasil is that many cases are associated with stress. Stress situations produce stimuli which pass through the sympathetic nerves, constricting blood vessels, and increasing heart rate. Hyperactivity of the sympathetic nervous system may elevate blood pressure; if prolonged, this may produce frank hypertension. By blocking the flow of excessive stimuli to the sympathetic nervous system, Serpasil guards against stress-induced vasoconstriction, brings blood pressure down slowly and gently.

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Serpasil is basic therapy, effective alone "...in about 70 per cent of cases..."*

In severe hypertension

Serpasil is valuable as a primer. By adjusting the patient to the physiologic setting of lower pressure, it smooths the way for more potent antihypertensives.

In all grades of hypertension

Serpasil may be used as a background agent. By permitting lower dosage of more potent antihypertensives, Serpasil minimizes the incidence and severity of their side effects.

*Coan, J. P., McAlpine, J. C., and Boone, J. A.: J. South Carolina M. A. 51:417 (Dec.) 1955.


SUPPLIED: SERPASIL Tablets, 0.1 mg., 0.25 mg. (scored) and 1 mg. (scored).

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OUTLOOK

- Live polio vaccine to get more tests abroad
- FDA to double-check new liquid formula diets

Not all 2,000 foreign doctors waiting to take a "last-chance" qualifying examination in April are to be barred from treating patients. The AMA, the National Board of Medical Examiners and the Educational Council for Foreign Medical Graduates have agreed to ease restrictions in hospital "hardship cases."

A major research center is being planned by New York University. The \$40 million center will occupy a 1000-acre site 35 miles northwest of New York City. Within a decade it is expected to accommodate more than 1,200 research faculty members and graduate students in medicine, physics, chemistry, geology, botany and engineering.

Some 900,000 children will get live polio vaccine in Swedish trials this year and next. Sweden has had good results with its killed-virus vaccination program—not a single case of polio among persons receiving two or three shots. Some experts, as a result, see "absolutely no reason to substitute anything else" for killed vaccines. But Swedish medical leaders, like those in many other countries, are going ahead with live vaccine tests because they feel this type has several advantages, especially as a booster. And, of course, the Swedes are attracted by the ease of administering the oral preparations.

Americans continue to smoke more cigarettes in spite of the many reports linking cigarettes with lung cancer and heart disease. Per capita consumption among persons aged 15 or older was four packs a week in 1960, according to the Tobacco Institute. The total spent for cigarettes, cigars and other tobacco was \$7,500,000,000—slightly less than half the total amount spent on health care.

Pharmaceutical detail men will soon be addressing laymen as well as physicians. The Pharmaceutical Manufacturers' Association plans to employ detail men as "missionaries of goodwill at the local level." In the months ahead these men, along with a group of pharmaceutical marketing and sales executives, will be out selling across the country industry's point of view before service clubs and community groups.

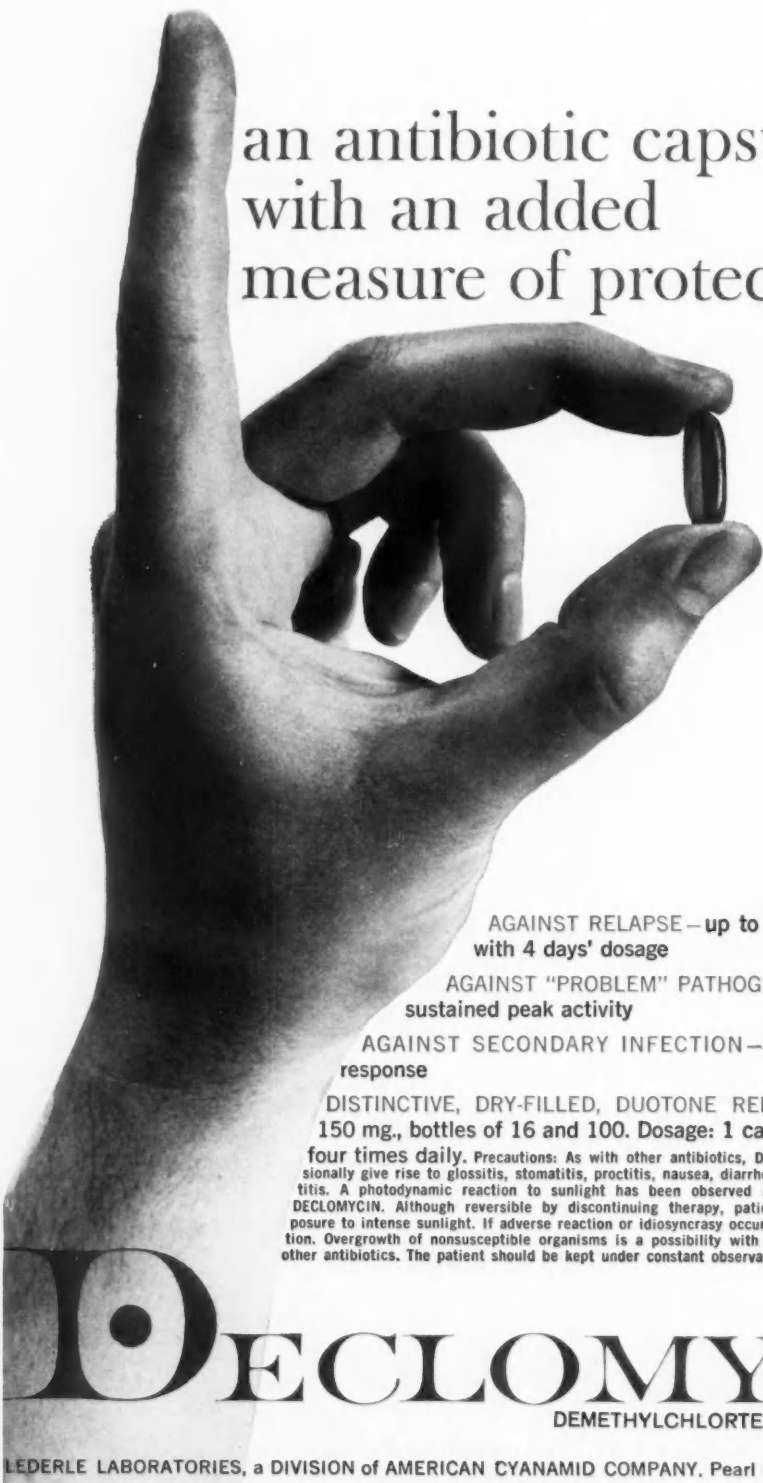
Food and Drug Administration inspectors will be keeping a close watch on the many new liquid formula diets that have flooded the market since the Cinderella success of Mead Johnson's "Metrecal." Most manufacturers are being careful to warn dieters to consult their doctors, and are complying with FDA labeling rules. But two actions already have been taken against measured-calorie drinks. In the Washington, D. C. area, 6,355 pounds of products valued at \$7,500 were seized on their way to market because of "false nutritional claims."

In Chicago, the Teamsters Union is seriously wooing pharmacists and drug store owners, despite the existence of the 50-year-old Retail Pharmacists Association. A top official of Local 714 says 1200 pharmacists have been signed up for a special division; next it will tackle drug store owners to "get them into a good association."

In Cincinnati, Health Department officials are ready to crack down on x-ray equipment users. First they'll inspect radiologists' offices and recommend that equipment be replaced or repaired where necessary. If radiologists don't follow suit, the city will seek policing powers.

MEETINGS

- Jan. 28-29 Los Angeles Radiological Society, Los Angeles
- Jan. 28-30 Symposium on Control of the Mind, San Francisco
- Jan. 28-31 Int'l Fertility Association, Acapulco, Mexico
- Jan. 30-31 Clinical Congress of Abdominal Surgeons, Miami Beach
- Feb. 4-7 AMA Congress on Medical Education and Licensure, Chicago
- Feb. 5-6 American Academy of Pediatrics, Scientific Meeting, Boston
- Feb. 6-7 Oklahoma Academy of General Practice, Oklahoma City
- Feb. 6-8 American Academy of Allergy, Washington, D. C.
- Feb. 6-9 American Urological Association, Western Section, Las Vegas
- Feb. 8-10 American Academy of Occupational Medicine, Detroit
- Feb. 8-11 American College of Radiology, Chicago
- Feb. 9-10 American Society of Facial Plastic Surgery, Memphis
- Feb. 9-11 Society of University Surgeons, Kansas City, Kan.
- Feb. 16-18 Central Surgical Association, St. Louis



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AGAINST RELAPSE—up to 6 days' activity
with 4 days' dosage

AGAINST "PROBLEM" PATHOGENS—uniformly
sustained peak activity

AGAINST SECONDARY INFECTION—full antibiotic
response

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sionally give rise to glossitis, stomatitis, proctitis, nausea, diarrhea, vaginitis or derma-
titis. A photodynamic reaction to sunlight has been observed in a few patients on
DECLOMYCIN. Although reversible by discontinuing therapy, patients should avoid ex-
posure to intense sunlight. If adverse reaction or idiosyncrasy occurs, discontinue medica-
tion. Overgrowth of nonsusceptible organisms is a possibility with DECLOMYCIN, as with
other antibiotics. The patient should be kept under constant observation.

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DRUG INFORMATION PLAN OFFERED BY THE AMA

A detailed program rushed to the FDA suggests that the AMA itself keep doctors regularly informed about old and new prescriptions

At the eleventh hour, the American Medical Association has rushed off to the Food and Drug Administration a proposal that the AMA itself take the lead in giving doctors the facts about old and new drugs.

The plan, dictated over the telephone from AMA headquarters in Chicago to its Washington office, was delivered by hand just a few hours before a deadline set for comment on the FDA's own program for supplying such information.

This is how the AMA proposes to keep doctors informed about drugs:

► Every doctor would receive, at least once a month, a new publication, *Authorized Brochures on Drugs*. One section would describe drugs evaluated by the AMA's Council on Drugs. Another section, printed on different colored paper, would deal with data on other drugs, based on information from the manufacturers. Detailed monographs on the drugs evaluated by the Council on Drugs would be sent to physicians on request.

► Doctors would be able to buy a new and improved version of the AMA's *New and Nonofficial Drugs*. This book, published every three years, would contain information about all drugs marketed during the previous 15 years.

► An annual *Handbook of Drugs*, compiling information presented in the monthly *Authorized Brochures on Drugs*, would also be published by the AMA. "This would be similar to desk reference books and drug encyclopedias now available, but would present

more complete information about action, uses, side effects and dangers than similar existing volumes."

In addition, the AMA is prepared to publish a column on new drugs and therapeutic developments in the *AMA Journal*, to continue a present *Journal* series on status of therapy, and to issue an annual therapeutic edition of the *Journal*. Moreover, the AMA also pledged to "accelerate the process of assigning generic names to new drugs."

In a letter accompanying the proposal, AMA executive vice-president Dr. F. J. L. Blasingame spelled out the thinking behind the AMA's move: "For a variety of reasons, we agree there is an urgent need for an enlarged, accelerated, improved informational and education program to provide all doctors with the full knowledge of the composition, dosage, modes of action, indications for use and hazards of all drugs. In our opinion, the development and implementation [of this program] should be primarily the responsibility of the medical profession, with the advice, consent and assistance of the drug manufacturers and the FDA."

Although the proposal was sent to the FDA at the last minute, the groundwork for the move was laid last summer when the FDA, as a result of the Kefauver Subcommittee investigation, decided to set up a new system to supply drug data to doctors. One key proposal was that full information about a drug be inserted in every prescription package.

Having made its suggestions, the FDA sat back to see what physicians

and the pharmaceutical industry thought of them. The reaction from both groups was more negative than positive. They agreed that some changes should be made, but felt the FDA was heading in the wrong direction. It was also suggested that the FDA package insert plan was no guarantee the doctor would in fact receive the information. In most cases, it was felt, the pharmacist would be the principal individual getting the pamphlets. Industry pointed out that inserts would add to the cost of drugs.

When the AMA suggested it needed time to develop a better system for informing the doctor, FDA decided to delay a final decision on the package insert issue.

Meeting Held with FDA

AMA leaders began formulating their proposal. During their annual clinical meeting, in Washington, several of them held an informal conference with FDA officials and broached their idea. FDA seemed receptive. So did industry leaders. The AMA Board of Trustees then approved the plan in principle and assigned AMA staff members to work out cost details.

The AMA proposal is now being studied by FDA officials. It is expected that a series of discussions with interested parties will follow.

Meanwhile, the following new FDA regulations will go into effect:

After January 8, all promotional or detailed material intended for doctors must carry full information about

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AMA OFFER CONTINUED

the drugs such as that filed with new drug applications unless the material does not offer suggested uses for the drugs. The agency will not enforce the regulation against drugs whose labels carry suggested dosages, provided no recommendations for use are made, and if the drug's name does not suggest its use.

These regulations have created a shock wave in many pharmaceutical companies and advertising agencies.

Their contention has been that their promotional campaigns are planned long in advance, and more time would be needed to change the printed material.

Additional Rules After March 9

After March 9, the following additional regulations will be in effect, unless an extension is granted:

1. Labels of injection drugs must declare the quantity or proportion of all inactive as well as active ingredients; labels of prescription drugs will have to carry identifying lot or control numbers.

2. Information about a new drug must contain data on uses, dosages, hazards and contraindications "substantially the same" as that appearing in the new drug application filed with FDA. Furthermore, "advertising or oral detailing for a new drug may offer

it only for use under the conditions specified in the labeling contained in the application [to FDA]. . . . Labeling or advertising which goes beyond the claims approved [by FDA] in the original labeling must be re-submitted for approval in advance of use."

3. Labeling carrying information about uses and dosage must carry the date of original issuance or any revisions.

4. If FDA is not satisfied that the manufacturing plant meets certain standards, it may refuse to clear a new drug until it inspects "manufacturing methods, facilities, controls or any records pertaining to them." If FDA does not have time to complete such an inspection within the time limit for granting or refusing a new drug application, it may give conditional approval.

5. Labels for eye preparations must declare the names of active ingredients.

If FDA does not accept the AMA proposal, and also decides against its own package insert plan, there is a third choice, proposed by some groups within the pharmaceutical industry—to authorize some other non-government organization to assume responsibility for reaching physicians with full information on drugs, making use of periodic personal mailings, a new publication, or both. ■

DOCTORS FAVOR DETAIL MEN AS SOURCE OF DRUG DATA

Doctors rely on detail men, and the manufacturers' literature as their "most important" source of "complete information on indications, contraindications and precautions for new drugs." And, as a means of refreshing their memory on dosage and action of prescription drugs, they most frequently use the *Physicians' Desk Reference*.

These are some of the findings in a survey of 1,552 physicians, conducted by United Marketing Services in conjunction with the Pharmaceutical Manufacturers' Association. The survey, which has been sent on to the chief of the FDA, consists of 1,106 questionnaires answered by American Medical Association delegates and officers, officers of other medical groups, and 446 random interviews at state medical meetings in Pennsyl-

vania, Kentucky and Michigan.

Among the other findings:

► Almost 60 per cent felt there is no need for "better quality of informational material or service on new drug facts than is currently being provided."

► But given a choice of receiving new drug information through direct mail from manufacturers, from detail men, or data supplied monthly by an independent central agency, half of the doctors questioned would prefer the independent central agency idea.

► A majority believed that the FDA proposal to insert a detailed brochure in each individual package would not be worth "a substantial addition to cost." Some industry leaders, according to PMA sources, estimate the package inserts would add millions to production costs.

NEW IDEAS

Electron microscopy is reshaping theories of myokinetics and providing some clues to the underlying chemical reactions

All the old coils, springs, accordions and elastic bands once used to represent contraction of a muscle fiber may be headed for the wastebasket.

In their place is a new picture of muscle contraction based on direct observation under the electron microscope.

At a special symposium of the New York Heart Association, and again at the 127th annual meeting of the American Association for the Advancement of Science, electron microscopists and biochemists displayed new evidence and pinned their theories to it.

Several groups of researchers are contributing to the total picture. In England, Drs. Andrew Huxley and Rolf Neidergerke at Cambridge University, have discovered that muscle fiber is made up of two distinct types of filament, one twice as thick as the other. Muscle contraction is produced by the sliding of the thin filaments along the thicker ones. And at University College in London, Drs. Hugh Huxley and Jean Hansen have found that "pegs" protrude perpendicularly from one filament to the other and, presumably, play a part in activating the sliding.

Describing the work of both groups, Dr. Hugh Huxley (no kin to Andrew) said that under the electron microscope the thick filaments stand parallel at fairly regular intervals, like strands of wool on a loom (opposite page). They are approximately 100 angstroms in diameter, and lie, in the cross-sectional view, some 450 angstroms apart in hexagonal patterns. Each filament is 1.5 microns long. In between the thick filaments lie the thinner ones, 50 angstroms in diameter and about 2 microns long. They slide back and forth. As the thin filaments move toward each other, the entire muscle fiber contracts.

Another possibility in the sequence of muscle activity is being developed by Dr. Richard J. Podolsky of the National Naval Medical Center in Bethesda, who theorizes that "pegs" along

OF MUSCLE ACTION PICTURED

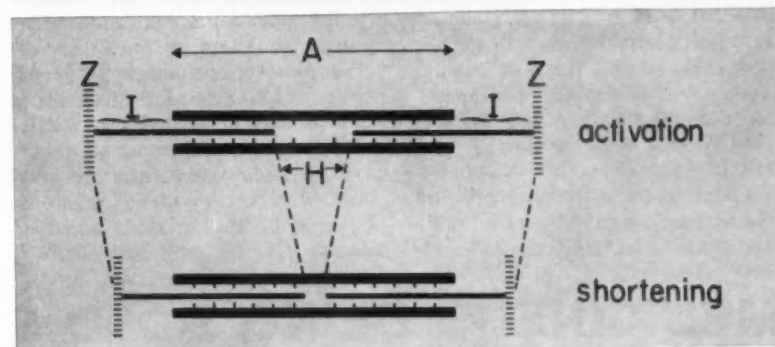
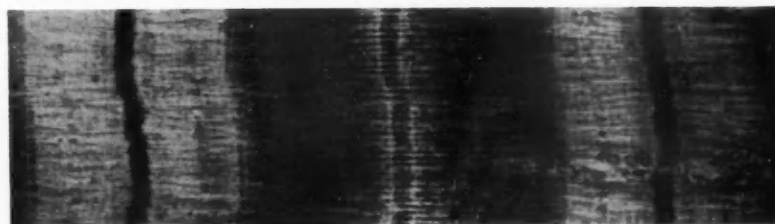
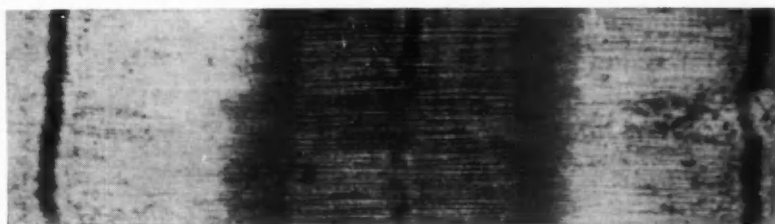
the thick filaments that the British investigators have found are a series of specific reaction areas which he calls D sites. The thin filaments have matching areas called K sites. At each K site are substrate molecules which create an attraction between the Ks and Ds. Whenever a D site attaches itself to a K site, one of these substrate molecules is used up. D then detaches itself from K, and proceeds to another K site which still holds its substrate molecule. This, says Dr. Podolsky, activates the sliding of muscle fibers.

At this point, however, both U.S. and British investigators run up against research's oldest problem: the gap between theory and experimental realization. It is generally agreed, for example, that at least 90 per cent of the energy for muscle contraction comes directly or indirectly from high energy bonds of creatine phosphate (CP) or adenosinetriphosphate (ATP). Yet studies of muscle have failed to prove a relationship between the amount of energy substance and the strength of the muscle.

In patients who have died of coronary insufficiency, for instance, heart muscle doesn't seem to be short of these energy chemicals—as might be expected—says Dr. Robert F. Furchgott of the State University of New York, Downstate Medical Center. Furthermore, Dr. Wilfried F. H. M. Mommaerts of the University of California, and others who have tried to show a breakdown of ATP during muscle contraction, have been unsuccessful.

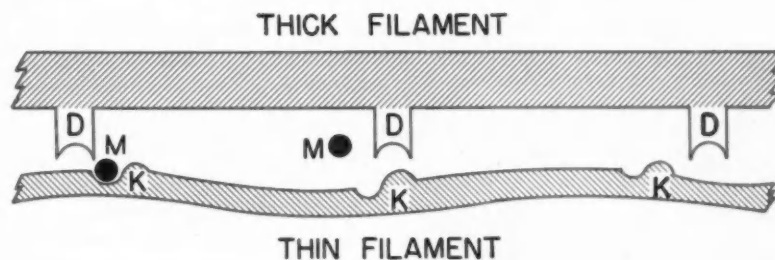
"This does not mean," Dr. Mommaerts points out, "that the ATP theory is false, but it means that a fairly serious experimental basis is missing on a crucial point in the argument."

In recent months, Dr. Mommaerts has turned up what appeared to be an important clue—the formation of an inorganic phosphate, which he calls XP, during a millisecond contraction of the frog's sartorius muscle. But explanation of its role has been complicated by another apparently whimsical twist of nature: Dr. Mommaerts finds that sometimes XP is there but doesn't break down as expected, at other times—in the autumn, for instance—the frog doesn't seem to have any XP in its sartorius muscle at all. ■



Muscle Fiber under the electron microscope reveals two types of intermeshed fibrils, thick and thin. Areas of overlap appear as dark shadows, the A bands. Thin fibrils slide away from thick ones during muscle relaxation (top) and slide toward center during contraction (bottom). Thus, the central portion of the fiber does not change length, but outer

edges (I zones) do. Dissolution studies indicate that thick filaments contain all the myosin of muscle, while thin filaments are mainly made of actin. Drawing shows relationship between thin and thick fibrils during contraction. The "pegs" jutting out from the thick fibrils are believed to be reactive sites where chemical energy is transmitted to the thin fibrils.



Chemical Concept of contraction is shown in composite diagram above. Thin filament slides to the left because a "peg" D, at the left, is attracted towards a K site which has a substrate molecule, M.

At center, a second D peg has attached itself to K, and the M molecule is being used up. At right, molecule has already been used up and D, detached from K, moves on towards another K and M site.

ELECTRONIC COMPUTER TURNS CLINICIAN

A mechanical brain challenges experts in diagnosing heart diseases, and wins hands down

Can the art of diagnosis be made a science by machine? At first thought, many doctors might scoff at the notion that a computer can act as clinician, reducing the subtleties of diagnosis to an expression of mathematical probability.

Four Utah doctors not only believe it's possible but are already doing it with congenital heart disorders. Dr. Homer B. Warner, of the Latter Day Saints' Hospital, Salt Lake City, reports that a Burroughs 205 digital computer can make correct diagnoses as consistently as a panel of clinical experts. And it outdoes the experts when it challenges them one by one.

Dr. Warner feeds the machine two kinds of information about diseases and symptoms: first, the probability of any one disease occurring in the population under consideration; and sec-

ond, the probability of any one of the symptoms occurring with any particular disease. In congenital heart disorders, for example, 44 symptoms are considered in conjunction with 34 possible diagnoses.

With this medical education, the computer is set to calculate the likelihood of each congenital disorder in the presence of any given combination of symptoms, within minutes.

Case History Computed

As an example, Dr. Warner and his colleagues—Drs. L. G. Veasy, A. F. Toronto and R. E. Stephenson—cite the case of a patient with the following signs and symptoms: intermittent cyanosis, squatting, dyspnea, easy fatigue, apical systolic murmur, accentuated P₂, ECG axis more than 110°, R greater than 12 mm in V₁, precordial systolic regurgitant murmur and a pulmonary systolic ejection murmur without thrill. The computer's diagnosis: 52 per cent probability of ventricular septal defect with pulmonary stenosis,

46 per cent probability of ventricular septal defect with infundibular pulmonary stenosis. By combining the answers, the computer had predicted a 98 per cent likelihood of tetralogy of Fallot. This diagnosis was later confirmed by right heart catheterization, the Utah physician noted.

Accuracy can be improved by including the fact that a certain symptom is absent, though it might reasonably be expected in conjunction with the other symptoms. For example, total anomalous pulmonary venous connection rarely occurs without cyanosis. By including the fact that cyanosis is not present, the computer automatically eliminates this possibility and substitutes partial anomalous pulmonary venous connection, thus bettering its percentage score.

The computer also evaluates the importance of any single symptom or sign in making a diagnosis. The machine is first given all the symptoms presented; then one symptom is deleted. If the diagnosis remains unchanged, it is apparent that the symptom contributed nothing toward making the diagnosis. Thus, the computer can alert the physician to focus on the most critical factors.

CONTINUED

'MEDICINE IS BEING SOLD SHORT'

There was a time when "medicine had a well-earned reputation as an art aided by science. Today, that reputation has been replaced by an image of the physician as a cold and precise man of science who does his thinking with a test tube and a hypodermic needle.

"As a result, medicine is being sold short," Dr. William H. Stewart of the U. S. Department of Health, Education and Welfare told an AAAS symposium in New York City.

DR. W. H. STEWART criticizes the "image."



in New York City.

Speaking before Alpha Epsilon Delta, the premedical honor society, Dr. Stewart declared:

"There's no doubt that this false image is a significant factor in the decline in medical school applications. The human factors have somehow been lost sight of, and medicine has become just another pure science."

In Dr. Stewart's opinion the physician is something more than a scientist. "Many of his decisions, probably most of them, go beyond science and into the realm of art."

But the image is well-established, Dr. Stewart warned, and many young people deciding on professional careers are undoubtedly influenced by it. "If the human relationships are played down—if medicine is made to seem a science like any other—why should a young man choose medicine? Why not another science instead?"

"While the present-day picture of the doctor is a discouraging one," the HEW official noted, "there is hope for

the future." That hope, he made plain, rests squarely on the profession.

"So long as neither the physician nor the medical educator is taken in by this popular image, we can hope that the reputation of medicine will reassert itself."

Looking ahead, Dr. Stewart pointed to the many advantages today's medical students enjoy that didn't exist for earlier generations.

"Today's graduate can go into solo practice or group practice. He can limit himself to one of 33 recognized specialties. He can go into medical research, medical administration and industrial medicine. He can teach, go into hospital administration or public health work."

No matter what the image of the physician may be, he said, the requirements for a successful career in medicine remain substantially unchanged. "The profession still needs students with the wit, the courage and the imagination to practice medicine in all its branches." ■

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DR. WARNER introduces a "colleague."

The medical future of computers is not limited to diagnosis, however. At the American Association for the Advancement of Science, Dr. Robert S. Ledley, president of the National Biomedical Research Foundation in Silver Spring, Md., suggested that a nation-wide network of computers could serve as "secretaries" to the medical profession.

Dr. Ledley foresees the day when a busy physician might pick up his phone, dial his medical computer, add the code number for a particular disease—and receive the latest published literature on the condition. The information could be furnished either as a prerecorded vocal summary or as a microfilm mailed to the doctor's office. Similar arrangements, he suggests, could make available the medical histories of new patients.

First step in such a network would be to devise indexing and coding methods for handling medical literature. Ultimately, a staff of medical specialists and computer technicians would feed coded information into the memory of a large central machine. Subsidiary computers scattered across the nation would enable doctors to "read off" the data by phone.

Electronic dissemination of medical literature, says Dr. Ledley, could help solve such problems as the 1953 epidemic of retrolental fibroplasia among premature infants. At the time, medical journals contained abundant experimental studies pointing to the cause of the disease (administration of too much oxygen to the infants).

This information was not used more promptly because most of it was in ophthalmological journals, which few pediatricians have time to read, says Dr. Ledley. "It took me two solid days to dig out the references; a computer could do it in minutes." ■

SCIENCE CAPSULES

Here in brief are sidelights from the 127th annual meeting of the American Association for the Advancement of Science, N. Y. C.

PHYSICIAN, BRACE THYSELF FOR THE COMING COSMETIC ERA

The physician should not be surprised if, ten years from now, a typical American male asks this intimate question: "Doctor, what kind of cosmetics should I use?"

Looking into his crystal ball, Dr. Glen J. Sperandio, associate professor of pharmacy, Purdue University, told a symposium sponsored by the American Medical Association that "within the next decade the American male will be using cosmetics almost as much as his wife."

These will be mainly for treatment purposes, at first. "Ultimately," he added, "it remains only for an advertising campaign to convince the public that a man does not sacrifice his masculinity by using cosmetics freely."

Cosmetics will be safer and "better than ever," he predicted. "One reason for this will be the passage of more stringent laws affecting the manufacture and sale of cosmetics; another will be more scientific formulation."

WEIGHT GAIN IN MICE IS ATTRIBUTED TO GROUP PRACTICE

The organization mouse, well-bred and well-fed, in a cage with eight to 15 other mice, weighs more and dies earlier than the mouse who lives alone. But when the lone mouse is placed among the crowd, he or she goes on an eating binge and soon becomes an indistinguishable member.

The reason, according to Dr. William Prychodko and Abdon P. Long of the Detroit Institute of Cancer Research, is that inbred strains of laboratory mice are natural born huddlers, and huddling hinders heat loss. Because of their togetherness, the mice hold on to their heat—and their fat.

TEST FOR PERNICIOUS ANEMIA ELIMINATES BODY RADIATION

A radioactive vitamin test can detect pernicious B₁₂ deficiency anemia without causing the patient to absorb any radioactivity.

Several clinical procedures using radioactive B₁₂ have been used in the last few years to determine whether a subject lacked "intrinsic factor," the

substance that enables the body to absorb vitamin B₁₂. The radioactive labels, traced through the body, indicated whether the vitamin deficiency was caused by absence of the factor, or simply by lack of vitamin in food. But the various procedures always involved giving radioactivity to the subject.

The new test, developed at Brookhaven National Laboratory, Upton, (L. I.), N. Y., and the Karolinska Institute in Sweden, involves adding the vitamin isotope to samples of the patient's gastric juice which, if normal, should contain intrinsic factor. Several proteins in the juice take up the radio-vitamin. The proteins are then separated by electrophoresis. By placing the electrophoretic paper strip on a photographic plate, radioactivity can be localized, permitting the identification of patients lacking intrinsic factor.

STING OR STIMULATION: WHY SOME LIKE IT HOT

Whether you take coffee piping hot or tepid does not depend on the pain threshold of your palate, as long believed.

"Thermode" tests of the hard palate indicate that the heat-pain threshold is always near 45° C, and almost never varies by more than one degree one way or the other, according to Dr. James D. Hardy of the Naval Air Development Center, Johnsville, Pa. The thermode devised by Dr. Hardy flushes water directly onto the hard palate and enables the recording of the exact temperature at which pain is first felt.

Why, then, do some people like their coffee as hot as 80° or 85° C, and how can they stand it?

Hot coffee drinkers are not necessarily masochistic, says Dr. Hardy. But they like the "sting and stimulation" as the liquid passes through the mouth. Studies show that hot coffee drinkers take a relatively long sip of air that cools the palate to 20° or 25° C, then a brief pulse of hot liquid, immediately followed by another sip of air that keeps (if all goes well) the palate's temperature below the pain threshold.

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1. Goodman, L. S., and Gilman, A.: The Pharmacologic Basis of Therapeutics, Second Edition, The Macmillan Company, New York, 1955, pp. 1454-5.

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MIXED MEDICINE IN CHINA

Chinese Communists are attempting to blend the 'traditional' medicine of acupuncture and herbal potions with modern science to provide health services for 600 million population

A unique experiment is now underway in Communist China: the merger of modern Western medicine with the traditional, empirical art of healing that has been practiced there for 4,000 years.

To China's relatively small band of modern physicians—most of them Western-educated—the government has officially added an army of 370,000 "traditional doctors." Their ministrations to the sick are based on the ancient theory that health or illness depends on the struggle between two forces—Yin, the negative, and Yang, the positive—and that different body parts must work in harmony through 12 hypothetical channels.

The enlistment of traditional doctors might appear to be a practical temporary measure to help attack the health problems of more than 600,000,000 people. But to experts gathered at a special AAAS symposium in New York it was made clear that the "new Chinese medicine" is no mere expedient.

Integration Program Expanding

Said Dr. William Y. Chen, who was a physician in China during World War II and is now a senior surgeon with the U. S. Public Health Service, "Some 2,100 modern doctors have been enrolled to study Chinese traditional medicine, and schools have been established to train traditional physicians in scientific medicine. There is now a department of traditional medicine in most of the larger hospitals. It is obvious that the integration is growing stronger rather than weaker."

Techniques of traditional Chinese medicine include acupuncture — the treatment by insertion into strategic body areas of hot or cold needles; moxibustion—the burning of an herb preparation on the skin; and the administration of herbal potions in accordance with medical writings handed down from generation to generation. "Anatomically and physiologically, traditional Chinese medicine has practically nothing to offer," according to Dr. Chen.

Yet the apparent anachronism that is the new Chinese medicine occasionally seems to work. This is indicated not only by reports issued by the Chinese Communists, but by visiting Western physicians, some of whom reported their own illnesses cured by "traditional" techniques.

More remarkable, however, have been the government's "ambitious endeavors" in public health and preventive medicine, which lean heavily on Western scientific methods.

"Since the Communist Party took over China, greater strides have been made in the improvement of sanitation, health education, and prevention and control of common infections and parasitic disease," Dr. Chen says. Among the many achievements that have been claimed during the past ten years he lists:

- ▶ A campaign to eliminate China's four major pests—mosquitoes, rats, flies and grain-eating sparrows. Entire populations of cities and villages were mobilized, with spectacular results: It is estimated that a billion sparrows, one and a half billion rats, 100,000 tons of flies and 11,000 tons of mosquitoes were exterminated in 1959 alone.

- ▶ Total disappearance of cholera; the basic eradication of smallpox and plague; and control of typhus.

- ▶ Great improvement in the control of schistosomiasis, which had been known to strike as many as 10,000,000 persons at a time. Some 4,000,000 patients have been cured and many areas freed from the disease.

- ▶ Drop of malaria incidence to less than three per cent, through use of new Western drugs and native herbs.

- ▶ Decline of tuberculosis mortality from 230 to 46 per 100,000, and reduction of syphilis and gonorrhea incidence.

The main shortcoming of medicine in China, says Dr. Chen, has been the emphasis on quantity rather than quality. "It is a tremendous undertaking to train the number of medical doctors and to establish the number of hospitals needed to cope with a population

as large as China's. It is easy to understand why the Communists have preferred mass production rather than individual craftsmanship."

More than 40,000 medical students have graduated during the last decade, versus only 10,000 between 1928 and 1947. Some 150,000 have completed two or three-year courses.

The practice of medicine is a modification of Russian "socialized medicine." All doctors are government employees receiving salaries prescribed by hospitals or other health organizations. Since the establishment of the peoples' communes, a system of collective medical care is practiced in many areas,

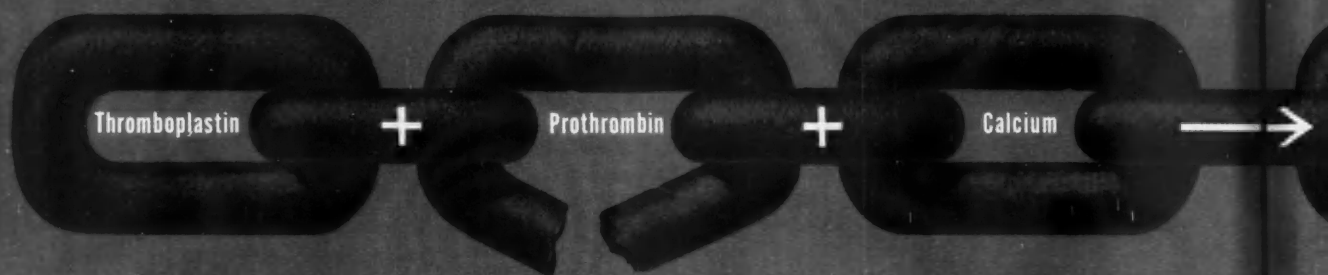


DR. CHEN reviews medicine's progress.

for which patients pay a small annual fee. Private practice has been almost totally eliminated.

Physicians—and scientists in general—face yet another problem, according to Leo A. Orleans, senior research analyst at the Library of Congress. They are distrusted by Communist Party leaders because many of them have studied under American or European tutelage, either in China or abroad. This distrust manifests itself by bureaucratic attempts to isolate the scientist from "corrupting" influences, and to limit his freedom to communicate with scientists abroad. For example, a study of the genetics of the fruit fly, following Mendelian lines, was once crossed off the recommended reading list as "reactionary." The Chinese official who banned it noted for future reference that the study had been authored by one Dr. Melanogaster. ■

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Council on Drugs: New and Nonofficial Drugs,
Philadelphia, J. B. Lippincott Co., 1959, p. 661.



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HEPATITIS PEAK PREDICTED

During the next three months incidence may hit a new high, warns Public Health expert

Infectious hepatitis may reach a new high in the U. S. during 1961, surpassing even the 1954 record of 50,000 cases.

This warning comes from Dr. Alexander D. Langmuir, chief epidemiologist of the Public Health Service's Communicable Disease Center, Atlanta, Ga. Hepatitis, he notes, surged beyond the 41,000 mark in 1960 and there's a chance the trend will continue. Physicians may expect their case loads to be particularly heavy this month and through February and March.



EPIDEMIOLOGIST Langmuir tracks cases.

Although hepatitis has been a health problem for years, its history in the U. S. was rather obscure until 1952 when it was finally added to the list of nationally reportable diseases. Since then its significance has become increasingly apparent.

For example, the disease appears to ebb and flow in cycles of six or seven years. From the 17,428 cases reported in 1952, the curve rose sharply to 50,093 in 1954. Then it turned downward again during the next three years, hitting a low of 14,922 cases in 1957. It climbed again steadily through '58-'59, reaching to more than 41,000 in 1960.

"In our own group, we are divided about half and half over whether 1960 or 1961 will turn out to be the new

peak year," Dr. Langmuir told **MEDICAL WORLD NEWS**. "I lean to 1961; I wouldn't be surprised to see 60,000 cases reported. A hint of his possibility can be seen in the fact that the third quarter figures for 1960 exceeded those of the same period in 1953, immediately preceding the 1954 high."

In 1960, attack rates were relatively high in the Mountain, Pacific and East South Central regions, and low in New England. Colorado, Kentucky and Tennessee were especially hard hit. But, in general, there appears to be no definite geographical pattern.

There is an age pattern, however. The five- to 19-year-old group is definitely hardest hit. In Tennessee, for instance, a study of 548 cases in 1959 showed that the greatest incidence—43.4 per 100,000—was in this age group. Other rates ranged from 29.4 for children 10-14, down to only 9.7 for adults and 8.1 for children under five.

Despite the attention they have received recently, neither water-borne nor food-borne outbreaks are a major part of the total problem. Water-borne outbreaks have been caused mainly by gross contamination of water supplies by sewage. Food has been suspected as the source in a few outbreaks—notably

Interview with Dr. Cecil J. Watson:

WHAT TO DO IN CASE OF VIRAL HE

First of all, what are the problems in diagnosis?

One of the most important, of course, is the matter of distinguishing hepatitis from obstructive jaundice. Here, a good history is essential. One must think about possible exposure to other cases of epidemic hepatitis within the past month or six weeks, whether the individual had blood transfusions, blood products or parenteral injections from two to six months previously, and, finally, whether other types of liver injury might be involved, due to chemical toxicity or perhaps occupational factors.

Isn't age a consideration?

Of some importance, of course. Younger patients are much more likely to have infectious hepatitis and older patients more likely to have a stone or cancer. But there are enough cases of hepatitis in older people and in the

borderline age groups—in the 40's and 50's—so that we must be very careful.

What laboratory findings are of value in differential diagnosis?

The most useful tests are the urine bilirubin and urobilinogen, the cephalin flocculation, serum transaminase and thymol turbidity. In infectious hepatitis, the serum transaminase (S-GOT) values are commonly over 500 units, while in obstructive jaundice they are usually under 200. There is a little overlapping, of course, but when we get values over 500, and especially over 1,000, we feel quite confident that we're dealing with a diffuse liver injury rather than an extrahepatic obstruction.

What are the significant values in the case of the cephalin flocculation test?

A value of at least 3 plus or 4 plus would favor a diffuse injury. In hepa-

titis it's commonly 4 plus and in obstructive jaundice it's usually zero or not more than 1 plus. With the thymol turbidity, four units is the upper limit of normal, and in obstructive jaundice, it rarely goes above normal. But in hepatitis cases, values commonly go above 10.

DR. CECIL J. WATSON, an authority on liver disease, is chairman of medicine, University of Minnesota Medical School. He is co-developer of the bedside test for porphyria and, from his discoveries on hemoglobin metabolism, has evolved methods for assaying liver damage and hemoglobin destruction, as well as determining patency of the biliary tract and diagnosing biliary cancer.



50 cases among University of Florida students which were linked to a particular cafeteria. But a definite association has not yet been proved.

In the case of serum hepatitis, Dr. Langmuir concedes there are no satisfactory figures. Serum and infectious hepatitis are lumped together in the state health department reports. An attempted breakdown by California suggests a serum hepatitis incidence of two to six per cent of the total case load.

"We do think, however, that infectious hepatitis accounts for the large majority of cases, but serum hepatitis causes most of the deaths," he comments. "The mortality statistics, for example, suggest this. Hepatitis mortality holds steady at a low level year in and year out, regardless of the epidemic or cyclical patterns of infectious hepatitis. Thus there is reason to believe that the deaths in the main reflect serum hepatitis."

Although some authorities believe serum hepatitis has been on the rise—along with increasing use of blood products—Dr. Langmuir thinks that the mortality picture and other factors indicate it is actually holding steady. The current surge of cases is attributable to infectious hepatitis. ■

AL HEPATITIS

While we're on the subject of diagnosis, are any tests sufficiently precise to be of value in the pre-icteric phase?

Oh, yes. Two of great value are the urine bilirubin and urobilinogen. If there are hepatitis cases around, and a patient presents with prodromal symptoms of hepatitis, such as weakness, nausea, anorexia, malaise, then one should see if he has bilirubin or urobilinogen in the urine. These are very simple tests of great value. The presence of much urobilinogen in the urine in the patient with jaundice points toward parenchymal liver disease such as hepatitis.

After diagnosis, what is your basic approach to treatment?

The important thing with the average case is simply bed rest and a good diet. We try to give the patient considerable protein. I don't push it above 100 gm, but I try to get the patient to

eat 80 to 100 gm of protein a day and plenty of carbohydrates (300 gm). Sometimes, he may take it better in small amounts, in a nutritious liquid mixture every hour during the day.

What might this consist of?

Well, for example, one of the things I like to give patients when they're sick is lemonade that has been sweetened with 10 per cent glucose. Keep that cold and give it to them every hour. Cold orange juice, if the patient likes it, may be given. There are also various protein and carbohydrate low-fat concentrates which may be mixed with water or milk.

You mentioned fats—what about them?

I don't object to fats. But don't let patients have any rendered fats—just olive oil, butter, salad dressing and that sort of thing. There is no evidence that these do any harm.

Getting back for a minute to bed rest. There are some differences of opinion on this; what is your policy?

I prefer to keep patients quiet during the acute stage of the disease. As soon as they feel well enough to eat and sit up, I let them. And I don't believe there's any evidence to the contrary. On the other hand, I don't believe they should be urged to resume activity until they feel like it. I don't let them resume their regular work or strenuous mental activity, with its stresses, until they are quite well. There are some people who think these patients can exert themselves safely at any time but I don't agree with this.

HIGHLIGHTS OF DR. WATSON'S GUIDES

DIAGNOSIS—It is most important to differentiate hepatitis from obstructive jaundice. Recommended tests: urine bilirubin, urobilinogen, cephalin flocculation and serum transaminase.

FAMILY CONTACTS—Give gamma globulin to all members who have been directly exposed.

CARE—Simple bed rest, considerable protein, plenty of carbohydrates and lemonade every hour for average case.

BED REST—During acute stage, complete bed rest. No regular work or strenuous mental activity for about a month.

OVERTREATMENT—This is a serious tendency. Vitamins are usually unnecessary. Antibiotics are useful only in case of impending coma. Steroids are superfluous in average case.

Why do you still feel bed rest is so important?

Well, that's simply been my experience. I've seen patients who had relapses when they went back to strenuous activity and stress.

What kind of guide do you use to determine when activity might be resumed?

First of all, from the subjective standpoint, I insist that they feel well and have a good appetite, that there is no further tenderness of the liver, and that there are no other adverse physical signs.

What kind of serum bilirubin level do you require?

I want total serum bilirubin to be less than 2.0 mg per cent and the conjugated or prompt direct reacting bilirubin to be less than 0.5 per cent before I allow patients to resume regular activity and occupation. The Bromsulfalein should be less than 10 per cent. The serum transaminase should be less than 50.

What is the average bed rest or inactivity period?

As a general rule about a month. When patients go back to their jobs, I usually recommend some limitation of work for a couple of weeks just to be sure they're getting along all right.

You were talking about diet. Some amino acids, like methionine, have been used. Are they of any help?

They have no value at all. I think everyone agrees on that. In fact, in a

CONTINUED

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HEPATITIS CONTINUED

severe case, methionine actually carries some danger because it can sometimes precipitate coma.

Is there any indication for vitamins?

I don't think so, if the patient will eat a normal diet. If he has had anorexia for a long while, however, and one is sure he has been on a low intake of protein, then I think vitamins ought to be added.

What about steroids? They're sometimes used.

We do use cortisone or prednisone now in the treatment of severe hepatitis. We don't use them in the average benign case because there is no evidence that it shortens the disease in such patients. In the severe case, however, where there is a good deal of necrosis of the liver and profound anorexia, there is pretty good evidence that cortisone may help get the patient "over the hump." We do use it in patients with hepatic coma.

Isn't this a little controversial?

Yes, some people would advise against steroids. But I think the bulk of the evidence—certainly in my own experience—indicates that steroid therapy does have genuine value in hepatic coma due to hepatitis.

A minute ago, you talked about adding glucose to lemonade. What are the indications for glucose and water or lemonade?

Well, glucose in hepatitis or in any diffuse liver disease is really the sheet-anchor of treatment. We want to fill up the liver cells that are still relatively normal with glycogen because it protects them against further insult. And it provides calories to carry them over nutritionally. We try to get in upwards of 300 or 350 gm of carbohydrate a day in one form or another, though not necessarily all glucose.

When is plasma, whole blood or albumin indicated?

I don't think they have any virtue in the early or ordinary case. If the serum albumin falls in the subacute case, as it does at times, then I think that albumin is sometimes quite helpful. It should be given, but it must be given with great caution.

Why is that?

Well, too much can cause fever and

pulmonary edema. Anything above 50 gm a day is accompanied by some danger of these complications.

What about prescribing antibiotics?

The only time I use antibiotics is when I think the patient is about to develop hepatic coma. If there is any indication at all of impending coma, then the intestinal tract must be sterilized. The best thing to use is neomycin, in my experience.

Isn't it a good idea to avoid drugs generally in cases of hepatitis?

The main reason for being cautious about drugs, apart from things which might damage the liver directly, is that sedatives, particularly the opiate series, will often precipitate coma if there is a tendency in that direction. And if there's the slightest trend toward hepatic encephalopathy, then the use of any sedatives in any amounts, especially opiates, is a real risk.

How about alcohol? That's another controversial subject. Some people seem to think it can be used.

We don't use or permit alcohol in active or sustained hepatitis. But I don't think it's harmful in small amounts during the late convalescent period.

Isn't there a tendency to overtreat patients with hepatitis?

Yes, I believe so. For example, one can give too much protein. There is evidence that protein in ordinary cases is beneficial, but in a severe case it may be very dangerous. If a patient begins to get really sick and shows the slightest sign of any abnormal mental disturbance, protein has to be discontinued completely. It is a two-edged sword, to be handled with caution.

In the case of family contacts, do you recommend gamma globulin?

I think gamma globulin should be given to all exposed family members. There is pretty good evidence that if it's given to the children they may get a so-called passive-active immunity.

And the dosages for gamma globulin?

Something in the neighborhood of 0.01 cc per pound of body weight. Smaller doses have been used, apparently with success, but there's evidence that at least 0.01 or 0.02 cc per pound (2-8 cc for adults) is desirable. ■

The underlying causes of constipation are generally the bile salts, the natural body laxative, increases the flow of hepatic bile, improving emulsification of fats and absorption of fat soluble vitamins. A balanced combination of digestant, choleretic and stimulant laxatives effectively increase the muscular activity of the colon and promote return to regularity. The hydrotropic action insures the formation and passage of normal stools. The underlying causes of constipation are generally the bile salts, the natural body laxative, increases the flow of hepatic bile, improving emulsification of fats and absorption of fat soluble vitamins. A balanced combination of digestant, choleretic and stimulant laxatives effectively increase the muscular activity of the colon and promote return to regularity. The hydrotropic action insures the formation and passage of normal stools. The underlying causes of constipation are generally the bile salts, the natural body laxative, increases the flow of hepatic bile, improving emulsification of fats and absorption of fat soluble vitamins. A balanced combination of digestant, choleretic and stimulant laxatives effectively increase the muscular activity of the colon and promote return to regularity. The hydrotropic action insures the formation and passage of normal stools.

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A ROUGH RIDE FOR RESEARCH

Space scientists, as their own guinea pigs, are battered and buffeted in the search for safe ways to get man off the ground

Powerful and reliable rockets to send man into space will soon be waiting on their launching pads. Firing time, however, may depend not on the engineer but on another member of the team—the space medic.

This relatively new breed of physician has had to start from scratch to find out what the physiological problems of space flight may be, how to duplicate them experimentally on the ground and how to solve them before the final countdown.

As in no other field of medical study, he and his associates generally serve as the chief guinea pigs for their own tests. Few people know better than these men how Astronaut Number One is going to feel.

"We've been going through many a rough ride for a long time," says one of these pioneers, Capt. Edward B. Magid, of the Wright-Patterson Air Force Base Aerospace Medical Laboratory near Dayton, Ohio. As a result, he and other space physicians have formed a fairly clear and somewhat overwhelming picture of the hazards of space flight. Most important of these are acceleration, weightlessness and vibrations.

Weightlessness, which results in loss of vestibular function, is the least serious physiological danger. It is also the easiest for the space medics to study, and virtually all of them have flown the Keplerian trajectory which produces zero gravity for brief periods.

[For an account of weightlessness read MWN writer Alex Dorozynski's report, opposite page.]

Vibrations are considerably more serious. They can produce pains of the head, thorax, abdomen and testicles; dyspnea and anxiety. More than half the volunteers who have undergone severe vibration tests at Wright-Patterson have complained of intermittent precordial pain lasting up to a week, Dr. Magid reports. And the possibility of permanent effects is still an open question. One volunteer, for instance, suffered internal hemorrhage to the extent of hematuria for several days.

"We need more time to find out what, if anything, we have done to ourselves in the long run," he comments.

The most crucial variable, acceleration, presents real problems to the space medic, whose own experience, and that of others, has piled up an impressive list of symptoms. Prominent are loss of vision; dyspnea and chest

pains from the increasing pressure of abdominal organs against the chest cavity; paroxysmal coughing; arterial oxygen desaturation; cyanosis; and breaking of surface capillaries. Volunteers have suffered hemoptysis lasting up to six hours, reports Capt. Alvin Hyde, chief of Wright-Patterson's acceleration section and a leading space-test volunteer and researcher.

Most of these findings have resulted from tests on rocket sleds or in centrifuges. These studies are concentrated on possible injuries or disturbances to vision, the cardiovascular system, viscera, and the nervous system.

But just last week, one space researcher launched himself into yet another kind of test—vertical acceleration—to find out what blast-off may do to the vertebral column.

While not a physician himself, 40-year-old Lawrence M. Patrick is, by experience and intention, an associate "space medic." He designed the special



HARNESSED to metal seat, engineer Patrick prepares for vertical blast-off.

rocket sled which he just rode for the first time—at a trial acceleration of 4 to 6 Gs—up an eight-story elevator shaft at Wayne State University College of Medicine in Detroit.

He plans to gradually work up to 25 Gs, where some human guinea pigs have been, and then, hopefully, to go beyond.

Propulsive power for his rocket-like shot up the shaft is provided by compressed air operating on a piston with an eight-foot stroke. It is equivalent to the firing of a five-inch gun. Acceleration occurs only during the first eight feet up a pair of rails 120 feet long. After that, the sled is slowed down by six pairs of friction brakes.

Overseeing the job are Herbert R. Lissner, chairman of Wayne University's department of engineering, and Dr. F. Gaynor Evans, professor of anatomy at the University of Michigan.

Prof. Patrick's Own Account

Immediately after his first two trial runs, engineer Patrick sketched his impressions for MEDICAL WORLD NEWS:

On the first ride, I must admit, I was thinking only about the possibility of getting my head hit.

I didn't have my helmet yet so I started thinking in advance about that metal tubing overhead that's part of the chair structure . . . plus the braking mechanism with sharp edges.

I was afraid that under the deceleration I might leave the chair and hit the structure. So just to play it safe, I taped some polyurethane onto my head. It was about ½ inch thick. I figured it would absorb a lot of the blow if I hit. . . .

[Before taking the first manned ride in a vertical rocket sled, Patrick and his co-workers had spent months hurtling cadavers up the shaft in order to make studies of severe G force on the spine. No fractures occurred, but there was considerable stress in several sections of the vertebrae.]

Of course, I was strapped in with a seat belt and shoulder harness and my feet were strapped down, just like the cadavers. But to be doubly safe, I held onto the seat arms firmly. Result: no damage.

Speaking of gripping the chair arms, I believed there would be a physiological advantage to tenseness. In the cadaver, for example, the soft tissues take no load during acceleration. But with muscles tense, you could probably

take some of the load in the soft tissues.

We have just incorporated several safety features that we decided were needed after the preliminary runs with cadavers. Noise and vibration were two major problems. Every time we fired, plaster and mortar fell down the shaft, indicating that pressures were a little higher than we would desire.

I had no misgivings about riding it myself. Of course, we started out at accelerations at which I didn't expect

any trouble. I expect, however, that we will use other riders. In experimental work of this nature, it's necessary to have a lot of data and make statistical evaluations. What one person may be able to take without discomfort, another may not be able to stand at all.

I hope to go the whole route myself, up to 25 Gs or maybe even more, but somewhere along the line I'm certainly going to look around for some other volunteers. ■



FLYING Keplerian trajectory, writer Dorozynski learns firsthand about weightlessness.

WITH THE FEWEST OF Gs

Associate editor Alex Dorozynski volunteered to undergo a zero-gravity experiment at Wright-Patterson. The following are his impressions:

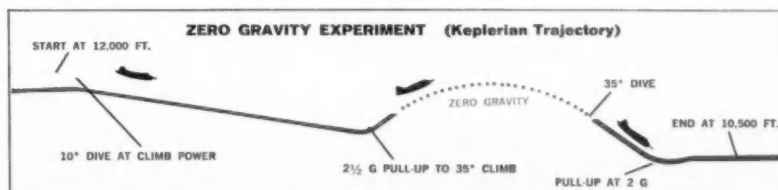
"Fifteen seconds to pull-up," the pilot calls on the intercom. The craft is diving, ten degrees at climb power. For the neophyte, there is considerable tenseness. You can almost feel your endocrines going to work.

Pull-up to 35 degrees starts rather suddenly. Pressed down into the seat at 2½ Gs, your face begins to sag. Body weight of 185 pounds grows to 465 in a second flat—and your eyelids

drop. Legs tingle as small capillaries give way under heavy pressure. An ill-advised attempt to sit up blocks peripheral vision, and you find yourself looking through a narrow black tunnel like a gun barrel.

Then suddenly the pressure lifts. Only the seat belt holds you down. There is a feeling of accomplishment and well-being, although the lack of pressure on the seat feels rather odd. (One experiment, performed by a veteran space medic, consisted of injecting novocaine into a pilot's posterior, observing how his reflexes were

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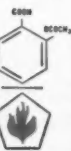


PATTERN of five-mile flight is designed to create 15-second period of zero gravity.



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Dosage: 1 or 2 tablets 3 or 4 times daily. The usual precautions of corticosteroid therapy should be observed. Additional information on DECAGESIC is available in physicians on request. **Supplied:** Bottles of 100. Each tablet contains 0.25 mg. of DECADRON (dexamethasone), 500 mg. of aspirin and 75 mg. of aluminum hydroxide (present as the dried gel). DECAGESIC and DECADRON are trademarks of Merck & Co., Inc.

*"Antidoloritic" describes the relief of pain associated with inflammation—*dolor*=pain, *itic*=associated with inflammation.

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SPACE CONTINUED
thrown off.)

You look down and see your leg floating in front of you. At zero G, you don't realize what's happening to your limbs unless you make a conscious attempt to control them, or unless you keep close watch.

Gs return rather suddenly. Next time, you get bolder. Straps off, you lie down in the mattress-padded cabin. In this position, G's don't seem like so much. Suddenly, pressure is off again. Without thinking, you push slightly with your arms and go spinning up to the ceiling. There's some physiological panic, though no real sense of danger. Somehow you succeed in getting back to the floor, instinctively clawing at the canvas as your legs twist over your head.

Fifteen seconds at zero G seem like a good minute. Then you come gently tumbling down into the padding, a smile on your face.

Euphoria on the Padding

After two or three more passes, you become accomplished. Your vestibular mechanism is of no use, but as long as you keep your eyes open, there is no feeling of disorientation. When you stand on the ceiling you discover that the ceiling definitely is *down*. Everything else is *upside down*. You learn to circulate by pushing yourself against walls.

When you try to drink milk from a quart carton, white globules pop out and float past your face. Efficiency is nil.

In the back seat, a pilot making his first zero G flight tries to hold back catastrophe with a paper bag over his mouth; he's learning that continuous switches from 2½ Gs to normal and back again can produce air sickness.

With admiration, you watch another pilot gleefully going through un-earthly acrobatics, drinking through a straw, eating specially packaged food. (Once the food is in the mouth, space medics have found, there is no trouble getting it down—or up, as the case may be.)

After 14 passes, you head back to the base, feeling somewhat green. Filling in the post-flight questionnaire, you face a dilemma. You answer "yes" to the question: "Did you enjoy it?" But you're not sure about "Would you like to try it again?" Gravity, you feel, is definitely part of your milieu. ■

HYPOTHERMIA ACTS AS RADIATION SHIELD

Experimental technique developed by Yugoslav scientist suggests way to protect space traveler against cosmic rays

Science fiction writers have long agreed that the spaceman of the future will travel through the cosmos in a state of "suspended animation," but they did not foresee that deep hypothermia would also protect them from cosmic radiation.

This unexpected discovery has just been reported by a Yugoslav researcher who successfully brought white rats back from deep hypothermia after he had bombarded them with normally lethal doses of x-rays.

In past attempts at hypothermia, the animal struggled against cold, losing too much energy to survive. Now, Professor Jevto M. Radulovic of the University of Zemun has apparently found a way to eliminate the struggle: as the animal is exposed to cold, it is also deprived of oxygen. Oxidation processes are greatly slowed down and the animal loses the power to defend itself against cold.

Effects of Radiation Curtailed

Rats in a state of "asphyxic hypothermia," Dr. Radulovic says, rest in a lethargic sleep with greatly slowed biochemical processes and physiological functions: their hearts beat at a rate ten times slower than normal and their blood pressure also drops.

Dr. Radulovic says that hypothermia is a "safe defense" against radiation. Adult white rats exposed to 750 r normally die four to six days later with typical symptoms of radiation sickness. Among rats irradiated with the same dose while in asphyxic hypothermia there was a low percentage of deaths, and even these occurred two to three months after irradiation.

Outside of the earth's atmosphere, where man may be exposed to intense cosmic bombardment, deep hypothermia may be as effective as a sheet of lead shielding.

In Dr. Radulovic's laboratory, animals were confined in a volume of

1,000 cubic centimeters and exposed to a temperature of about four degrees C. As they consumed oxygen, their body temperature decreased to 8-12 degrees C. Minimal amounts of oxygen were introduced from time to time to prevent complete asphyxiation.

Hypothermic animals exposed to radiation, he observed, lost less hemoglobin and fewer erythrocytes, leukocytes, thrombocytes and neutrophils than normothermic animals. The hematopoietic system of many hypothermic animals completely re-established its functions, and gastrointestinal symptoms of radiation poisoning, such as hemorrhage, were considerably decreased.

Blood Chemistry Assayed

Furthermore, damage to the skin, loss of hair and loss of body weight were less pronounced in the hypotherms than in the normotherms. Hypothermia showed a strong anti-hemolytic effect, preventing a change in the dispersion of colloids, which was very pronounced in normothermic animals exposed to x-rays.

Dr. Radulovic's results in determining variations of erythrocyte fragility between hypothermic and normothermic white rats:

► Initial hemolysis of erythrocytes in hypotonic solution of NaCl before irradiation ranged between 0.42 and 0.40 per cent NaCl, and complete hemolysis was reached at 0.30 to 0.28 per cent.

► In normothermic rats initial hemolysis after irradiation was between 0.56 and 0.52 per cent, and complete hemolysis 0.40 to 0.38. Immediately before the death of the animal (four to six days after irradiation) fragility increased to 0.64 per cent for initial, 0.40 for complete hemolysis.

► Animals irradiated with the same dose while in deep hypothermia lost erythrocyte resistance to a lesser degree than normothermic animals. After irradiation, initial hemolysis was between 0.48 and 0.46, complete between 0.34 and 0.32 per cent NaCl. A few weeks later osmotic resistance returned to normal. ■

ABOUT THE PARADOX OF THE COUGH...

IN THEORY:

PHARMACOLOGIC ANTAGONISM

a central depressant and a stimulant expectorant

IN PRACTICE:

THERAPEUTIC REINFORCEMENT

central depressant-expectorant combination results
in fewer but more productive coughs

IN THEORY:

PHARMACOLOGIC ANTAGONISM

an expectorant and a decongestant

IN PRACTICE:

THERAPEUTIC REINFORCEMENT

bronchial expectorant and nasal decongestant
act at different levels of the respiratory tree
to relieve cough-provoking irritation

INTRODUCING

A NEW AND BETTER RESOLUTION OF THE COUGH PARADOX

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A NEW AND BETTER RESOLUTION
OF THE COUGH PARADOX

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What is the best way to treat a severe, protracted, or stubborn cough?

Many physicians prescribe a central cough suppressant, together with an expectorant and a nasal decongestant.

Prescribe pharmacologic antagonists? At first glance it may seem absurd to attempt to increase respiratory fluid and stimulate productive coughing, while simultaneously drying up secretions and depressing the cough reflex. A paradox?

NEW TUSSAMINIC EXPECTORANT combines three such agents, working together at different levels of the respiratory tree, to produce a beneficial result . . .

COUGH SUPPRESSANT dihydrocodeinone—pharmacologically more active than codeine, but with less tendency to cause constipation, nausea, and drowsiness. In the dosage employed, it does not abolish cough reflexes, but merely raises the threshold of the medullary cough center. As a result, a minor irritative stimulus is unlikely to trigger a chain of coughing.

EXPECTORANT glyceryl guaiacolate—capable of increasing respiratory tract fluid 200%, and free from the side effects of the iodides. It loosens and liquefies thick, irritating mucus, helping remove a major source of irritation to the lower bronchial mucosa, making the cough more productive.

DECONGESTANT TRIAMINIC—provides complementary action. Postnasal drip often precipitates the cough. **TRIAMINIC** stops postnasal drip irritating to the sensitive pharyngeal and laryngeal membranes. . . . *Paradox of the pharmacologic antagonists resolved.*

Only **NEW TUSSAMINIC EXPECTORANT** provides this complementary and effective combination of dihydrocodeinone, glyceryl guaiacolate, and **TRIAMINIC**.

(It's colorful; it's mint-flavored;
your patients will like it.)

Each tsp. (5 ml.) of Tussaminic Expectorant provides:

DIHYDROCODEINONE BITARTRATE . . . 1.67 mg.
(Warning: May be habit forming)

TRIAMINIC® 25 mg.
(phenylpropanolamine HCl . . . 12.5 mg.
pheniramine maleate . . . 6.25 mg.
pyrilamine maleate . . . 6.25 mg.)

GLYCERYL GUAIACOLATE 100 mg.
CHLOROFORM approx. 13.5 mg.
Alcohol 5%

Dosage: (to be administered every 4 hours)
Adults—2 tsp.; **Children 6 to 12**—1 tsp.

Supplied: Bottles of 1 pint.

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INTERVIEW of epileptic child and parent is first step in visit to traveling New Jersey clinic for convulsive disorders.

EPILEPSY EXPERTS GO ONT

Traveling clinics in New Jersey bring the consultant to the p

Skillman Village, near Princeton, N. J., used to be the "end of the line" for epilepsy patients. The institution still houses a few patients so deteriorated by years of merely custodial care that there's no possibility of a return to normal life.

But in the past ten years, the Village has been transformed. Today, it is the center of a program which serves as a model for communities and states in bridging the gap between the epileptic patient and the family physician by employing the kind of modern care that virtually eliminates institutionalization.

The Village is now known as the New Jersey Neuropsychiatric Institute, where epilepsy cases requiring detailed study are admitted briefly, and where a major research center is being developed. All other diagnosis and treatment of epilepsy cases is

handled through a series of "traveling clinics"—the N. J. Consultation Service for Convulsive disorders—now celebrating a decade of work.

Physicians throughout the state can refer epilepsy patients to a clinic in each of the state's four health districts. Consultation and demonstration sessions are held regularly, and each patient becomes the special concern of a Consultation Service team—including a specialist in epilepsy, a project director, vocational and educational experts, and a local "contact physician."

Some 73 per cent of clinic patients are under 18. Before appearing for team study, each is given a preliminary neurological examination and EEG; and histories are taken—medical, social and economic. At the clinic, the patient is fully examined, his problem discussed and recommendations drawn for the referring physician, who again

takes over responsibility for the case.

The Consultation Service has now held 278 such traveling clinics and examined more than 1,200 patients. It reports "drastically reduced" hospital admissions—from hundreds annually to only six in 1959. The Service's efforts have even brought about changes in state laws, so that epilepsy patients may now drive automobiles (after two seizure-free years) and marry.

"The Consultation Service has brought the influence of expert professional opinion and advice into the heart of local communities and local medical practice," says Dr. Jesse McCall, president of the New Jersey Medical Society. "Patients can be effectively treated in their own homes by their family physicians with the full benefit of topflight concepts of diagnosis and therapy. Our membership is proud of this service." ■



CHECK of facial weakness as indication of possible underlying disease is made by clinic team member.



INJECTION of procaine prepares special case for pneumoencephalogram of cerebrospinal pathways.



HISTORY-TAKING from patient's father is conducted in local schoolroom "borrowed" for periodic clinic.



CONSULTANT Hammill advises local physician to push drug dosage close to toxicity before giving it up.

SUPERVISORS of the N. J. traveling clinic operation are Harold G. Logan (l) and Dr. Robert E. Bennett.

ON THE ROAD

ant to the physician and his patient



in edema or

- more doctors are prescribing —
- more patients are receiving the benefits of —
- more clinical evidence exists for —



in congestive failure

"Chlorothiazide was given to 16 patients for a total of 295 patient-treatment days." "Chlorothiazide is a safe, oral diuretic with a clinical effect equal to or greater than a parenteral mercurial." Harvey, S. D. and DeGraff, A. C.: N. Y. State J. Med., 59:1769, (May 1) 1959.



in hypertension

"... our program has been one of polypharmacy in which we attempt to deplete body sodium with chlorothiazide. This drug is continued indefinitely as background medication for all antihypertensive drugs." Moyer, J. H.: Am. J. Cardiology, 3:199, (Feb.) 1959.



in premenstrual edema

"Chlorothiazide is an excellent agent for relief of swelling and breast soreness associated with the premenstrual tension syndrome, since all patients [50] with these complaints were completely relieved." Keyes, J. W. and Berlacher, F. J.: J.A.M.A., 169:109, (Jan. 10) 1959.

DOSAGE: Edema—One or two 500 mg. tablets DIURIL once or twice a day. Hypertension—One 250 mg. tablet DIURIL twice a day to one 500 mg. tablet DIURIL three times a day.

SUPPLIED: 250 mg. and 500 mg. scored tablets DIURIL (chlorothiazide) in bottles of 100 and 1,000.

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r hypertension

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than for all other diuretic-antihypertensives combined!



in edema of pregnancy

"One hundred patients were treated with oral chlorothiazide." "In the presence of clinically detectable edema, the agent was universally effective." "Chlorothiazide is at present the most effective oral diuretic in pregnancy." Landesman, R., Ollstein, R. N. and Quinton, E. J.: N. Y. State J. Med., 59:66, (Jan. 1) 1959.



in cirrhosis with ascites

"All three of the patients with Laennec's cirrhosis, ascites and edema had a favorable response, with a mean weight loss of 8 lbs., during the five-day treatment period with a slight decrease in edema." Castle, C. N., Conrad, J. K. and Hecht, H. H.: Arch. Int. Med., 103:415, (March) 1959.



in renal edema

"In a study of 10 patients with the nephrotic syndrome associated with various types of renal disease, orally administered chlorothiazide was a successful, and sometimes dramatic, diuretic agent." Burch, G. E. and White, M. A., Jr.: Arch. Int. Med., 103:369, (March) 1959.



MERCK SHARP & DOHME
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Product News

TO CONTROL PETIT MAL

Zarontin (Parke-Davis) is ethosuximide, the latest drug in the succinimide series of anticonvulsants for the treatment of petit mal epilepsy. In clinical trials, it has provided complete or practical control of seizures in 63 per cent of patients. It induces minor side effects such as nausea, gastric distress, drowsiness, dizziness and headache in a few patients.

Available in soft gelatin capsules containing 0.25 gm ethosuximide, in bottles of 100.

BOOKLETS

Facts about Congestive Heart Failure is a pamphlet for patients. It explains, in language the layman can understand, what "heart failure" means, what causes it, how it happens, what the signs and symptoms are and how it is treated. Published by the American Heart Association, the pamphlet is designed to help patients understand the problem and the importance of treatment, without fright-

ening them. Available from the American Heart Association, 44 East 23rd St., New York 10, N. Y.

FOR DIURESIS

Metahydrin (Lakeside) is another potent new thiazide diuretic indicated in edema marked by sodium retention. In hypertension, *Metahydrin* is effective whether administered alone or in combination with other anti-hypertensive drugs. It has produced no hypotensive effect in patients who are not hypertensive.

In clinical use, side effects have been minimal. However, electrolyte imbalance may result from continuous use of maximum doses. The drug is contraindicated in renal failure and in severe renal disease with rising azotemia or development of hyperkalemia or acidosis.

Dosage must be adjusted to the severity of the condition and the patient's response to therapy. Scored tablets are available in 2 mg and 4 mg strengths in bottles of 100.

FOR URINARY INFECTIONS

Azo-Mandelamine (Warner-Chilcott) combines phenylazo-diaminopyridine HCl (*Pyridium*) and methenamine mandelate (*Mandelamine*) for simultaneous treatment of urinary tract infections and relief of pain. *Pyridium*, a specific analgesic for the urogenital system, relieves pain within 30 minutes and *Mandelamine* destroys most urinary tract pathogens, including many strains resistant to both antibiotics and sulfonamides.

Indicated in cystitis, prostatitis, non-specific urethritis, bladder calculi and other irritative conditions of the bladder and prostatic area, *Azo-Mandelamine* also prevents pain and infection during instrumentation and is ideal therapy in surgery.

Dosage in adults is two tablets four times daily; in children over 60 pounds, one tablet per 15 pounds body weight per day in divided doses. Each capsule-shaped tablet contains 50 mg *Pyridium* and 500 mg *Mandelamine*. Available in bottles of 100.

Editor's Choice

TOLBUTAMIDE TOLERANCE TEST IMPROVES DIABETES DETECTION

An elevated response to a glucose load in persons with fasting normoglycemia may lead to the erroneous assumption that this, *ipso facto*, is proof of diabetes. Actually, only about 20 to 30 per cent of such individuals develop overt diabetes, according to long-term follow-up studies. Moreover, just as many eventually revert to normal glucose tolerance responses.

On the other hand, the tolbutamide tolerance test differentiates between diabetics and non-diabetics with considerable accuracy. More than half of patients with conditions that can influence glucose tolerance, such as obesity or liver disease, have a normal response to the tolbutamide test—even though response to the glucose tolerance test is abnormal. In non-diabetics, the prompt and marked drop in blood sugar after intravenous injection of tolbutamide is accompanied by a distinct rise in insulin-like activity of peripheral blood. This is presumptive evidence of actively functioning islet cells but it may also

be due to other effects of tolbutamide.

Trials on 465 persons suggest that the test appears safe, reproducible, easy to perform and to interpret. Kaplan; *AMA Arch. Int. Med.*, Jan. 1961, pp. 75-87.

HERPES SIMPLEX VIRUS FOUND IN MYELOGENOUS LEUKEMIA

So varied are the manifestations of herpes simplex that "herpes complex" might have been a more appropriate term for this viral disease. Among clinical conditions linked to herpes infection are fatal erythema multiforme, Kaposi's varicelliform eruption, Behcet's disease, infectious mononucleosis and, most recently, myelogenous leukemia.

Previously, an association between herpes and malignancy had been suggested by the presence of esophageal herpetic lesions in terminal cancer patients. And in one series of lip cancers, herpes lesions were recorded as forerunners of the malignant growths.

In the patient with myelogenous leukemia, generalized herpes simplex erupted prior to the appearance of

nodules typical of the acute phase of myelogenous leukemia. In view of this, the practitioner should be alert to possible confusion of herpes with other bullous diseases known to be connected with malignant disease. Solomon; *AMA Arch. Int. Med.*, Jan. 1961, pp. 126-130.

THYROID HORMONE HELPS IN IODINE AVID TUMORS

Now and again carcinomas of the thyroid may "mimic" normal thyroid tissue so well that even metastases retain the ability to concentrate iodine. When this is the case, the use of thyroid stimulating hormone (TSH) may accelerate the uptake of I^{131} by metastases remaining after extirpation of the primary tumor.

In one patient, a ten-year-old with widespread pulmonary metastases from cancer of the thyroid, the secondary lesions completely disappeared after treatment with TSH and I^{131} .

The patient has a normal hematogram and no evidence of pulmonary dysfunction. Kaplan, Allen and Butler; *Am. Pract.*, Jan. 1961, pp. 31-38.

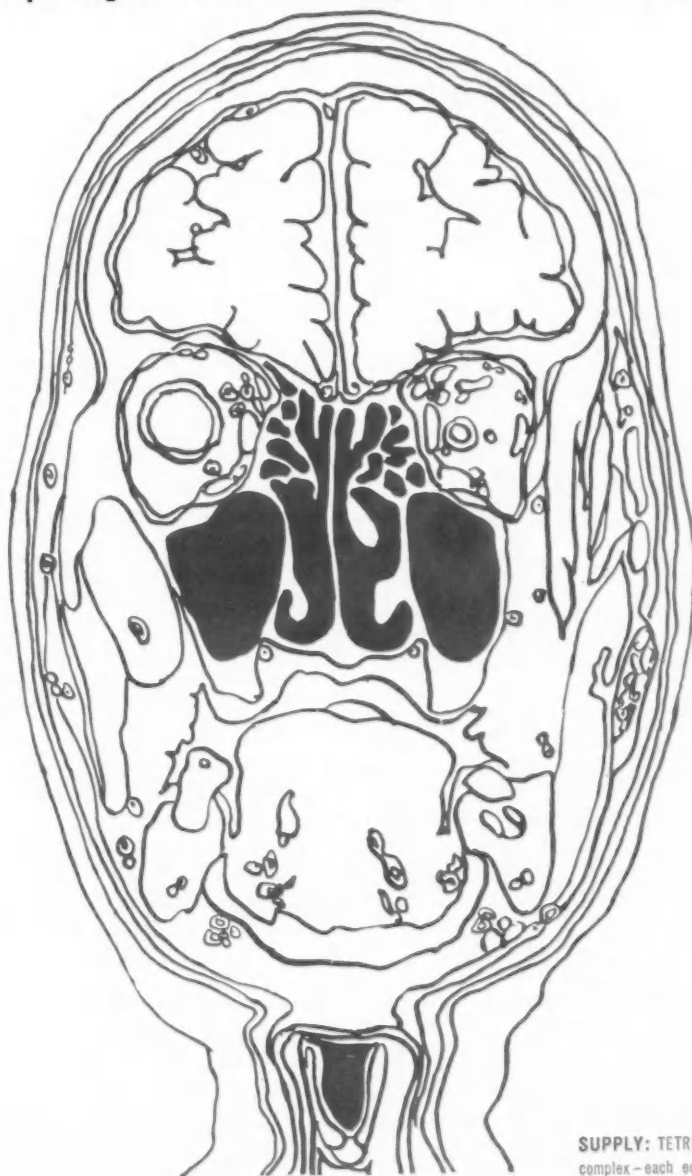
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DOCTOR'S BUSINESS

The Internal Revenue Service has just made a special ruling that hospital-employed physicians, like private practitioners, may deduct the cost of malpractice insurance. Normally, U.S. tax laws bar an employee from claiming deductions for personal expenses such as insurance premiums. The IRS now recognizes, however, that a physician working for a hospital is just as liable as a doctor in private practice for lawsuits charging malpractice.

Physicians who buy "inside" information on market trends note Congressional amendments to the Investment Advisers Act. These amendments will put new teeth into already-existing laws designed for the protection of prospective investors.

A new kind of professional management service is being promoted to physicians by Simplified Tax Records, Inc. (170 Varick St., N. Y. 13, N. Y.) Subscribing doctors receive detailed record-keeping forms for professional fees and expenses, a tax and management advisory bulletin, completed Federal and state income tax returns and an expert's answers to questions about office management, securities, real estate transactions, etc. Annual cost: \$185.

Bankers report a slow-down in payment of personal loans by borrowers and interpret it as a sign of recession blues around the country. Department stores also find delinquencies in instalment payments on the rise in several areas—particularly in 50 major centers of unemployment. Taken together these two trends indicate an increase in slow-payers among doctors' patients in the year ahead—a trend that MDs should think about in the months ahead.

One of the nation's top experts on Soviet medicine, Mark G. Field of Harvard's Russian Research Center, sees a threat to U.S. medical leadership unless medical schools turn out more physicians. In a letter to "The New York Times," Field warns that the Soviets are graduating more than twice as many doctors as we are. In five years, he says, there will be four Russian graduates for every one in the U.S. Current ratio of physicians to population is eighteen per 10,000

persons in Russia, compared to fourteen per 10,000 here. And the ratio will narrow in Russia and widen in the U.S. Says Field: "We can argue that our physicians are better trained, that the quality of medical care they give is higher and that medical research in the United States is second to none in the world today. While this argument is valid up to a point, it does not solve the problem of the availability of medical practitioners for the population at home and abroad."

A physician's right to pre-empt a telephone party line in an emergency has been reaffirmed. In upholding the conviction of a housewife who refused to yield a party line to a doctor in an emergency, the New Jersey State Supreme Court approved an existing—but previously untested—state law supporting the doctor's contention that he had prior rights to the line. The New Jersey Court's action sets a precedent for similar laws in 30 states that require persons to give up party lines in all recognized emergencies.

The more people make, the more they spend for medical care. Proof of this comes in a breakdown of medical expenses listed in tax returns. Here are the average medical expenses for taxpayers of different income groups:

Income	Medical Expenses
\$3,500-\$4,000	\$270
4,000- 5,000	285
5,000- 6,000	275
6,000- 7,000	300
7,000- 8,000	310
8,000- 9,000	370
9,000-10,000	400
10,000-15,000	520
15,000-20,000	770

Car rental prices may be coming down. "Discount house" car rental agencies are beginning to spring up all over the country. The chief one: Budget Rent-A-Car with offices in five cities. Three firms charge only \$5 a day and seven cents a mile for new compacts—five cents if renters buy the gasoline. Most physicians who rent cars have been paying \$9 a day and nine cents a mile (including gas) for compacts.

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Names in the News

POSTS AND AWARDS

Dr. Heinz Lord appointed secretary general of the World Medical Association, an organization of 750,000 doctors in 56 countries. Raised in Germany, Dr. Lord, during World War II, was a member of an underground group of German doctors and was eventually interned in a concentration camp. He came to the U.S. in 1954, after organizing the Marburger Bund, a German federation of hospital doctors. He succeeds **Dr. Louis H. Bauer**, past president of the AMA, who has held the post since 1948.



Dr. George B. Kistiakowski, President Eisenhower's special science adviser, to return to his post as professor of chemistry at Harvard. **Arthur S. Fleming**, HEW chief, under consideration for the presidency of the University of Oregon.

Dr. Josef Warkany, professor of research pediatrics at the University of Cincinnati College of Medicine, elected first president of the Teratology Society, a new international organization devoted to studying the cause and prevention of congenital malformations.

OBITUARIES

Dr. Valy Menkin, 59, head of the pathology department at the School of Dentistry at the University of Kansas City; in 1944 he discovered the nitrogen compound, pyrexin, which apparently causes fever associated with inflammations; Dec. 12, in Kansas City.

Jacques Cattell, editor and publisher of *American Men of Science* as well as publisher of the *American Naturalist*; he had also lectured at the University of Arizona on technical publishing; Dec. 18, in Phoenix.

Dr. Frank Ober, 79, former chief surgeon at the New England Peabody Home for Crippled Children, consulting orthopedic surgeon at Peter Bent Brigham Hospital and, since 1946, chief orthopedic surgeon emeritus at the Children's Hospital, Boston, where he was known for his treatment

Dr. Chester Scott Keefer, president of the American College of Physicians, member of MWN's Editorial Advisory Board and former director of the Boston University—Massachusetts Memorial Hospitals Medical Center, named University Professor at Boston University. **Dr. James M. Faulkner**, former medical director of MIT, is the new acting director of the Medical Center.

Dr. Paul Gross, professor of chemistry at Duke University, named president-elect of the AAAS during its convention in N.Y.C. Among medal winners at the meetings were: **Dr. Richard J. Havel**, associate professor of medicine at the University of California School of Medicine, winner of the Theobald Smith Award in Medical Sciences established by Eli Lilly and Company; **Dr. Owsei Temkin** (photo), director of the Institute of the History of Medicine at Johns Hopkins School of Medicine, awarded the Sarton Medal for achievements in his field as a medical historian by the History of Science Society in cooperation with Chas. Pfizer & Co.



of polio victims and work in bone and joint surgery; Dec. 26, in Boston.

Dr. E. J. Tiffany, 59, until his retirement last year, chief training officer at the Government's Communicable Disease Center in Atlanta, Ga.; Dec. 25, in Atlanta.

Dr. Maurice C. Pincoffs, 74, for 30 years head of the department of medicine at the University of Maryland School of Medicine, as well as physician-in-chief at University Hospital, Baltimore; he pioneered Maryland's Medical Care Program, which offers free diagnosis and treatment to welfare patients, and since 1932 he edited the *Annals of Internal Medicine*; Dec. 8, in Baltimore.

Dr. William Palmer Lucas, 80, for 35 years a professor of pediatrics at the

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University of California; for his work as head of the children's bureau of the American Red Cross in Europe during World War I, he was honored by the Belgian and French Governments; Dec. 16, in Oakland, Calif.

Dr. Frederick Fuller Russell, 90, public health expert, former professor of preventive medicine and epidemiology at the Harvard Medical School and developer of the first successful typhoid vaccine; Dec. 29, in Louisville.

Dr. Vincent Fanoni, 76, surgeon and attending physician for the Metropolitan Opera Company for 45 years; Dec. 19, in New Canaan, Conn.

Dr. Arthur Ruggles, 79, mental hygiene leader and former physician in chief of Butler Hospital, Providence, R. I.; Jan. 2, in Boston.

UNITED FUND VS INDIVIDUAL DRIVES CONT.



Morris Fishbein, M.D.

At the annual meeting of the Chicago Heart Association, Dr. Robert H. Hamlin reported preliminary results of his study of voluntary health and welfare agencies under the auspices of the Rockefeller Foundation.

As a suggestion for immediate consideration, Dr. Hamlin feels that the present rancorous debate over individual versus United Fund drives is taking up time which would much better be devoted to discussion of programs and coordination between agencies.

The first step would be for a group—perhaps the National Health Council—to bring together leaders of the voluntary health agencies and representatives of the United Fund in order to work out some basis for action. Dr. Hamlin apparently believes, and I believe with him, that there are areas in which the United Fund may operate most efficiently and other areas in which the voluntary health agencies are better qualified to do their own fund raising.

The Harvard researcher also points out: "The prime reason and justification for voluntary agencies is that they supply competition in ideas and methods."

Anyone with even a casual knowledge of what has been accomplished in this area by such agencies as the American Cancer Society, the American Heart Association and the National Foundation, will not need further evidence. A comparison with the accomplishments of Government agencies in similar fields will indicate the difference.

One function of the private agencies, Dr. Hamlin suggests, might well be a study of what the Government is doing both in research and in services, using the highly competent scientific advisory groups which are associated

with all of the private philanthropies.

Perhaps the Harvard public health expert's most important suggestion is that the voluntary agencies give at least as much attention to their programs for spending money as they do to raising funds. They need constantly to reassess their activities.

In the establishment of the National Foundation, arrangements were made to authorize research grants only from the central agency and not to provide research grants through local bodies. Dr. Hamlin generally favors this approach. From my personal observation, however, the research grants made by the Chicago Heart Association, for example, reach areas of research definitely related to local conditions which would not be covered by the American Heart Association.

Kenny Scandal a Warning

The great scandal associated with the Kenny Institute of Minneapolis, however, emphasizes the need for standards of uniform accounting and reporting by voluntary agencies. The conspicuous example of success in this regard is Los Angeles where a municipal board of social service commissioners has the responsibility for investigation of philanthropic agencies.

The tremendous increase in the number of local foundations is disturbing. The innumerable small foundations indicate a great lack of efficiency. No doubt the resistance raised against giving by the creation of the United Fund has greatly altered the approach of philanthropies to the public.

Morris Fishbein

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